



CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY



# California - Baja California Border Environmental Infrastructure Needs Assessment



GOBIERNO DEL ESTADO  
LIBRE Y SOBERANO DE  
BAJA CALIFORNIA

DIRECCION GENERAL DE ECOLOGIA DEL ESTADO DE BAJA CALIFORNIA



CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

A large, faint, light gray map of California and Baja California is positioned on the left side of the page, serving as a background for the title.

# **California - Baja California Border Environmental Infrastructure Needs Assessment**

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**APRIL 1998**



GOBIERNO DEL ESTADO  
LIBRE Y SOBERANO DE  
BAJA CALIFORNIA

**DIRECCION GENERAL DE ECOLOGIA DEL ESTADO DE BAJA CALIFORNIA**



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**Pete Wilson**, *Governor*

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A special recognition and thanks to Mr. Bart Christensen, Border Coordinator, State Water Resources Control Board, Mr. Paulino Luna, Waste Management Engineer, California Integrated Waste Management Board, and Mr. Ricardo Martinez, Environmental Liaison, California-Mexico Relations, for their interest, time and dedication in working on California-Baja California Border issues. And to Maria Bozionelos for her dedication on the design of this report.

A very special thanks to Mr. James M. Stubchaer, Vice Chair, State Water Resources Control Board, for his efforts in providing the leadership, interest and commitment to resolve environmental challenges along the California-Baja California Border.

Many thanks to Mr. Adolfo González Calvillo, Director, and Mr. Ruben Sepúlveda Marquez, Deputy Director, Dirección General De Ecología (Department of Ecology), State of Baja California, for their support and participation in this report and for their continuous cooperation in working with the State of California to resolve environmental problems of mutual interest along our shared border.

**Peter M. Rooney**  
*Secretary for Environmental Protection*



GOBIERNO DEL ESTADO  
LIBRE Y SOBERANO DE  
BAJA CALIFORNIA

## California Border Environmental Cooperation Committee Comisión de Cooperación Ecológica Fronteriza de las Californias

Dear Interested Party:

**Mr. Peter M. Rooney**  
CHAIR

**M.C. Adolfo González Calvillo**  
MEMBER

**Ms. Joan Milke Flores**  
MEMBER

**Ing. Fernando Aceves Salmon**  
MEMBER

**Mr. Lee Grissom**  
MEMBER

**Lic. Jorge Gallego Salas**  
MEMBER

**Lic. Ramon Salido Almada**  
MEMBER

It is a fact that society's interests with regards to environmental matters have surpassed political and institutional boundaries and that such interests have opened new channels of interaction between social groups and sectors as well as governments.

It is within this context that the Governments of California, Baja California and Baja California Sur formed the California Border Environmental Cooperation Committee (Cal/BECC), which has worked collectively in recent years to establish coordinated actions which aim at the implementation of strategic programs directed towards protection of public health and the environment in a shared region.

These actions have also allowed the establishment of a greater degree of coordination through information exchange with the rest of the US-Mexico Border Governments.

This Environmental Infrastructure Needs Assessment Report states in a very simple and concise way, the need to strengthen environmental infrastructure in the border region with technologies that provide for the conservation and rational use of the Californias' natural resources.

The environmental infrastructure projects mentioned within are focused on the delivery, distribution and treatment of water and integrated waste management.

To that end, the support that comes from the different societal sectors to bring these projects to fruition, in concert with State and local environmental policy, will surely improve the quality of life and the environment in our region.

We would like to thank all of the organizations, groups and individuals that participated in this report and ask for their continued support and interest in pursuing the welfare of our shared border.

Sincerely,

Peter M. Rooney  
Secretary  
California Environmental Protection Agency

M.C. Adolfo González Calvillo  
Director General  
Dirección General De Ecología  
del Estado de Baja California



GOBIERNO DEL ESTADO  
LIBRE Y SOBERANO DE  
BAJA CALIFORNIA

## California Border Environmental Cooperation Committee Comisión de Cooperación Ecológica Fronteriza de las Californias

Estimado Lector:

**Mr. Peter M. Rooney**  
CHAIR

**M.C. Adolfo González Calvillo**  
MEMBER

**Ms. Joan Milke Flores**  
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**Ing. Fernando Aceves Salmon**  
MEMBER

**Mr. Lee Grissom**  
MEMBER

**Lic. Jorge Gallego Salas**  
MEMBER

**Lic. Ramon Salido Almada**  
MEMBER

Es un hecho que los intereses de las sociedades modernas en torno a los aspectos ambientales han rebasado fronteras políticas e institucionales, y que se han extendido de forma tal que se han abierto nuevos espacios de interacción entre grupos, sectores y gobiernos.

Dentro de este marco de referencia, los Gobiernos de California, Baja California y Baja California Sur, a través de sus representantes de desarrollo económico, obra pública y medio ambiente formaron la Comisión de Cooperación Ecológica Fronteriza de las Californias, con el objeto de promover la realización de proyectos de infraestructura ambientales en la región.

Bajo este contexto se ha trabajado en los últimos años fortaleciendo las acciones de coordinación a través de la promoción, recomendación e implementación de programas ambientales estratégicos a lo largo de la frontera, encaminados a la protección del medio ambiente y la salud pública de una región compartida.

Estas acciones han permitido establecer a su vez una mayor coordinación mediante el intercambio de información, con el resto de los Gobiernos Fronterizos de México y Estados Unidos.

El presente reporte manifiesta de manera sencilla y clara, la necesidad de fortalecer la infraestructura ambiental en la región Fronteriza, así como la aplicación de nuevas tecnologías que permitan la conservación y aprovechamiento sustentable de los recursos naturales de las Californias.

Las necesidades de infraestructura ambiental abordadas en este reporte, están enfocadas a los aspectos relacionados con el abastecimiento, distribución y tratamiento de agua y el manejo integral de residuos sólidos.

En este sentido el apoyo que se logre a través de los distintos sectores de la sociedad para la realización de los proyectos contenidos en este documento aunados a la política ambiental de los Estados y las ciudades Californianas, seguramente mejoraran la calidad de vida y el medio ambiente de nuestra región.

Deseamos expresar nuestro más sincero agradecimiento a todas las organizaciones, grupos y personas que han participado con sus proyectos, y exhortarlos a seguir manifestando su interés por el bienestar de nuestra frontera común.

ATENTAMENTE.

M.C. Adolfo González Calvillo  
Director General  
Dirección General De Ecología  
del Estado de Baja California

Peter M. Rooney  
Secretary  
California Environmental Protection Agency



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<b>California-Baja California Map with Border Environmental Infrastructure Projects</b> .....	<b>(Figure 1)</b>





PETER M. ROONEY

#### A MESSAGE FROM THE SECRETARY

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As we move into the 21st century, there are three areas of focus in the forefront of the environmental challenges we face along the California-Baja California Border: clean water, pollution prevention, and sustainable development. These areas gained notoriety with the passage of North American Free Trade Agreement (NAFTA) and its environmental side-agreements which identified issues of importance and priority areas. This report is intended to serve the reader as a compendium of resources, and aims at clarifying the roles, functions and programs of the many institutions and organizations involved in promoting and funding environmental infrastructure projects along the US-Mexico border region.

This second edition of the California-Baja California Environmental Infrastructure Needs Assessment report marks the continuation of a cooperative effort between Cal/EPA and its Baja California counterparts in addressing our common environment needs. I trust the information in this report will dispel some of the common myths and sheds light on misconceptions regarding the California-Baja California border. It may be common place to hear that the NAFTA has brought environmental demise to the border region and has made it a wasteland or that environmental laws are nonexistent in Mexico. While these misconceptions are at times sensationalized by the media, it is also necessary to point out the positive strides California and Baja California have taken to confront and resolve environmental challenges along their shared border. In reality, California has set precedent in many areas relating to border environmental issues. State-to-state collaboration and cooperation at an environmental policy maker's level is at an all time high between California and Baja California and more recently with Baja California Sur. Although, Baja California Sur's Environmental Infrastructure Projects are not included in this report, mention of this State is essential since it is a California Border Environmental Cooperation Committee member. It is anticipated that the next edition of this report will include environmental infrastructure from all three Californias.

While we may not be able to conquer all environmental challenges, we will master many. California will continue to seek out environmental infrastructure projects of a sound nature that benefit the Border region as a whole. I am optimistic that through cooperation, trust, dedication and mutual respect, differences and similarities between both states will amalgamate enabling us to defy and resolve environmental challenges along the border region.

A handwritten signature in red ink that reads "Peter M. Rooney". The signature is written in a cursive, flowing style.

**Peter M. Rooney**  
*Secretary for Environmental Protection*

# PURPOSE OF THIS REPORT



TIJUANA RIVER ESTUARY, NEAR THE SAN YSIDRO BORDER.

## PURPOSE OF THIS REPORT

### BACKGROUND

Rapid growth in cities along the US - Mexico border has resulted in overuse of available water resources and put a strain on existing water and wastewater treatment plants in both countries. There has also been a significant increase in air pollution and solid waste. Both countries recognized the devastating and long reaching impact and effect such growth entails, and have agreed to cooperate in planning and implementing environmental infrastructure projects that will provide sustainable development within the Border region.

As part of the North American Free Trade Agreement (NAFTA), two international institutions were created in an effort to ameliorate the existing and proposed environmental infrastructure along the United States-Mexico Border thereby providing a healthier environment.

The Border Environment Cooperation Commission (BECC) was established to work with affected states and agencies to coordinate environmental infrastructure projects on both sides of the Border, certify these projects, and make them viable candidates for funding.

The North American Development Bank (NADB), the BECC's sister institution, was established to provide funding for environmental infrastructure projects within 100 km (approximately 62 miles) on either side of the United States-Mexico border. Created as interdependent institutions, the NADB and the BECC work as a team to promote and fund environmental infrastructure projects in the Border region.

In 1994, Governor Pete Wilson (California), Governor Ruffo Appel (Baja California) and Governor Mercado Romero (Baja California Sur) met in San Diego to hold the 48th General Assembly of the Commission of the Californias. At this meeting, the California Border Environmental Cooperation Committee (Cal/BECC) was created by the Governors and the General Assembly. The purpose of Cal/BECC is to identify and promote Border environmental infrastructure projects complementary to both states, establish Border priorities, and to solicit funding for those projects. Cal/BECC is currently chaired by Peter M. Rooney, Secretary of the California Environmental Protection Agency.

This report focuses on environmental infrastructure in-line with the three BECC priorities: a) waste water treatment, b) water delivery and c) municipal solid waste. Approximately 175 letters were sent to local, state and federal governmental agencies in San Diego and Imperial Counties requesting information on potential projects. Other organizations, water districts and communities were also included in the initial contact attempt. A copy of the letter, which was sent to potential project proponents is identified as Attachment A in the Appendix.

This report contains a summary of environmental infrastructure projects along both sides of the California-Baja California border within the 100 km belt. No attempt was made to prioritize the projects or to establish a rating criteria. All projects submitted by January 1998 are included. The report also includes a discussion of the BECC, NADBank, and their respective programs, Cal/BECC, Cal/EPA Boards and Departments and some programs from the USDA, USEPA and USAID.

#### DIFFERENCES FROM THE FIRST EDITION

The initial Environmental Needs Assessment Report published in April 1995 included a diversity of environmental projects. While these projects identified specific areas, needs and accomplishments along the California-Baja California border, many projects did not truly address environmental infrastructure projects and did not qualify for funding under the BECC and NADB priorities and guidelines. Future editions of this report will coincide with BECC and NADB priorities. A report entitled: "California - Baja California Border Environmental Activities" will address other non-infrastructure environmental needs, projects and accomplishments and will be published under separate cover in 1998.

The imminent needs in protecting public health and the environment along the Border are pollution prevention, adequate treatment of water supply and waste water and appropriate handling of solid waste. To that end, this and subsequent reports will focus on the three BECC priorities.

Additionally, this second edition includes information relevant to programs that the BECC, NADB, USDA and USEPA recently implemented or are in the process of implementing. The Appendix section contains forms for various programs, amongst these are the NADB Institutional Development Cooperation Program, BECC Step I form and the Global Technology Network. Many of the grants mentioned in this report are given on a first come first serve basis and most are available to the ten states that make up the U.S.-Mexico Border.

In this second edition, our neighboring state, Baja California agreed to participate by soliciting the same information from prospective project proponents located on their side of the border. The response in Baja California was very positive. A total of 29 projects were submitted by prospective project proponents totaling approximately \$150 million. A section in Spanish is included in this report on these projects.

It is anticipated that the next edition of this report will include environmental infrastructure projects from California, Baja California, and Baja California Sur. Although Baja California Sur does not qualify for North American Development Bank funds, it does comprise a portion of the three Californias corridor, a region with substantial activity in trade, commerce and similarities in its environment.

### PROPOSALS SUMMARY

A total of 25 agencies or firms responded to the request for proposals on Border environmental infrastructure projects.

As of January 1998 a total of 65 proposals had been received, some for multiple projects. Of these, a large portion involve construction of major environmental infrastructure. The total cost of projects in California-Baja California approximates \$1.4 billion dollars.

A summary of projects submitted in response to Cal/EPA and State of Baja California's request is included in Table 1. Projects certified by the BECC in California and Baja California are listed in Table 2.

**TABLE 1: PROJECTS PROPOSALS SUMMARY**

CATEGORY <sub>1</sub>	# SUBMITTED	COST <sub>2</sub>	POPULATION BENEFITED <sub>3</sub>	COUNTY <sub>4</sub>
WATER SUPPLY	19	764.1	1,489,266	San Diego, Ensenada, Imperial
WASTE WATER TREATMENT	40	670.5	2,417,995	San Diego, Imperial, Mexicali, Tijuana, Tecate, Ensenada, Rosarito,
SOLID WASTE	6	15.8	478,350	San Diego, Rosarito, Ensenada
<b>TOTAL</b>	<b>65</b>	<b>\$1,450.5</b>		

**TABLE 2: BECC CERTIFIED PROJECTS IN CALIFORNIA-BAJA CALIFORNIA**

CATEGORY <sub>1</sub>	# SUBMITTED	COST <sub>2</sub>	POPULATION BENEFITED <sub>3</sub>	COUNTY <sub>4</sub>
WATER SUPPLY	1	19.6	19,000	Imperial
WASTE WATER TREATMENT	4	129.6	1,804,091	Mexicali, Tijuana, San Diego,
SOLID WASTE	NONE			
<b>TOTAL</b>	<b>5</b>	<b>\$149.2</b>		

<sup>1</sup> Based on the Border Environment Cooperation Commission priority areas

<sup>2</sup> Approximate cost in millions of dollars

<sup>3</sup> Based on 1990 Census Information

<sup>4</sup> In Baja California Municipalities apply

# BORDER ENVIRONMENT COOPERATION COMMISSION (BECC)



THE BORDER ENVIRONMENT COOPERATION COMMISSION (BECC) IS AN INDEPENDENT, BINATIONAL ORGANIZATION CREATED TO SUPPORT THE DEVELOPMENT OF ENVIRONMENTAL INFRASTRUCTURE PROJECTS IN THE 100 KM REGION ON EITHER SIDE OF THE U.S.-MEXICO BORDER.



## BORDER ENVIRONMENT COOPERATION COMMISSION

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## OVERVIEW

### BACKGROUND

The Border Environment Cooperation Commission (BECC) is an independent, binational organization created to support the development of environmental infrastructure projects in the 100 km region on either side of the U.S.-Mexico border. The Governments of the United States and Mexico created the BECC, and its sister organization, the North American Development Bank (NADBank), pursuant to an Agreement between the two Governments, in November of 1993.

The two organizations provide a new, bilateral approach for the development and financing of environmental infrastructure projects (water supply, wastewater treatment, and municipal solid waste). The BECC identifies, assists, evaluates, and certifies projects for financing consideration from the NADBank, or other funding sources. The BECC and NADBank work hand-in-hand to develop and finance projects in the border region.

When the NADBank is fully capitalized, it will have the lending capacity of \$3 billion dollars, with contributions made equally by the United States and Mexico, to leverage the financing needed by border communities. NADBank has additional resources to supplement its loan funding. The Border Environment Infrastructure Fund (BEIF), a \$170 million grant program initially funded by EPA, was created to provide grants for construction and transition funds to BECC-certified projects. Furthermore, the investment of private capital or equity capital and additional sources of funding is critical to complement NADBank's resources.

### THE BORDER REGION AND ENVIRONMENTAL PRIORITIES

The border region is defined by the 1983 La Paz Agreement as the corridor 100 km (62 miles) on either side of the U.S.-Mexico boundary from the Gulf of Mexico to the Pacific Ocean.

More than 10 million people live in this region, in 6 Mexican states and 4 U.S. states. Rapid population growth, spurred on in part by increased industrialization, has created mounting environmental problems. These problems do not recognize international boundaries and include BECC's top priorities: water pollution, lack of wastewater treatment, and municipal solid waste management. The BECC's priorities presently do not encompass air pollution issues.

Given the nature of binational pollution problems, resolutions must be achieved through bilateral cooperation, addressing problems simultaneously on both sides of the border. The BECC and NADBank will help border communities address their environmental pollution problems for a sustainable economic and environmental future that will improve the quality of life for all border residents.



## HIGHLIGHTS AND ACCOMPLISHMENTS

### PROJECTS CERTIFIED BY THE BOARD OF DIRECTORS

The BECC Board of Directors has certified sixteen environmental infrastructure projects to date, with a total investment cost of \$230 million dollars, to benefit more than 3.6 million border residents. Projects are certified by the Board of Directors, with input from the BECC Advisory Council, during interactive public meetings held in U.S.-Mexican border cities. (See Attachment A for a list of Certified Projects.) The sixteen projects are among 100 projects currently in the project pipeline.

Eleven of the sixteen certified projects have sought or are seeking NADBank loans and/or grants through the BEIF. To date, the Bank has approved four projects for financing. The other five of sixteen projects are utilizing BECC certification to seek funding from other sources.

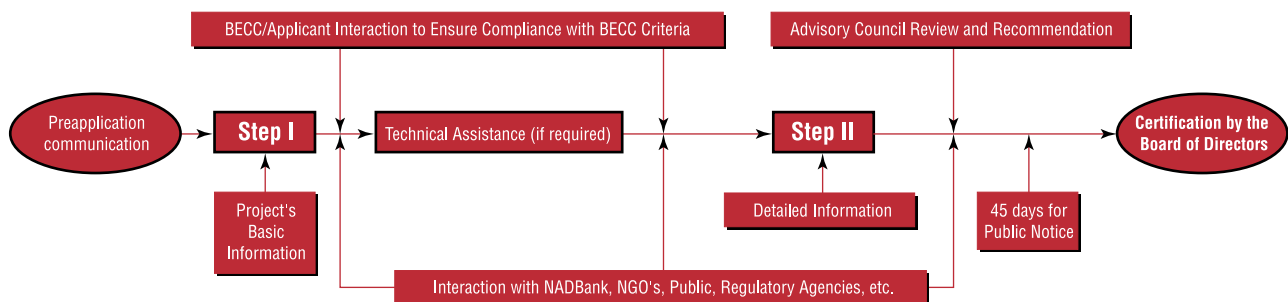
Currently, of the projects certified, seven have begun construction (Brawley, CA; Mercedes, TX; Nogales, Son.; FINSA, Tamps.; EPISO, TX; Douglas, AZ; El Paso, TX). According to the project sponsors, three more projects are scheduled to begin construction shortly (Agua Prieta and Puerto Peñasco, Son.; and Alton, TX).

### PROJECT DEVELOPMENT AND TECHNICAL ASSISTANCE

The BECC received a \$10 million grant from the EPA to enhance its Technical Assistance Program and provide direct grants to communities for project development. The purpose of the program is to help communities strengthen their project proposals through comprehensive planning and design, environmental assessment, financial analysis and institutional capacity building and strengthening.

The program is enhanced by coordination with local, state and federal governments and the local communities to promote integrated regional master plans and project development. Strengthening the institutional capacity of local communities is critical to ensure that local communities can operate and maintain the facilities themselves over the long-term.

### CERTIFICATION PROCESS FLOW CHART



To date, the BECC has provided more than \$800,000 to communities for assistance with project development. In fact, almost every certified project has received technical assistance from the BECC. The specialized BECC staff also helps communities identify environmental infrastructure needs, prepare project proposals and strengthen institutional capacity for project management.

The NADBank has established an Institutional Development Cooperation Program (IDP) that will devote at least \$2 million per year in grant resources to assist public utilities with institutional capacity building and strengthening. The NADBank has devoted IDP resources to Brawley, CA; Douglas, AZ; Mercedes, TX; Naco, Agua Prieta, Puerto Peñasco and Nogales, Sonora; and Cd. Acuña, Coahuila, and expects to be working with 32 additional communities by the end of the year.

#### BECC STANDARDS FOR PROJECT CERTIFICATION

The BECC has developed Project Certification Criteria in order to evaluate and certify environmental infrastructure projects. To be certified by the BECC, a project must comply with each of the BECC criterion related to: 1) environment and human health; 2) technical feasibility 3) financial feasibility and project management; 4) community participation; and 5) sustainable development. The criteria document also incorporates guidelines to achieve high sustainability recognition for those projects that incorporate principles of sustainable development, above and beyond the specific criteria.

#### BECC BOARD OF DIRECTORS

The BECC has a binational Board of Directors with 10 members—five from each country—with decision-making procedures structured to ensure that the views of affected states, local communities, and members of the public will be fully taken into account. The Commission is required to consult with an Advisory Council of 18 members—nine from each country. The BECC is managed on a day-to-day basis by a General Manager and a Deputy General Manager and other officers and staff required to perform the duties. The first BECC General Manager position is currently filled by a Mexican national, Mr. Javier Cabrera. The BECC Deputy General Manager, is a US national, Mr. Pete Silva. These positions/countries will reverse at the end of each three-year term unless the Board makes an exception. Each country has five members on the Board of Directors.

##### *The U.S. Board Members are:*

Mr. Ygnacio Garza, BECC Board Chairman, Brownsville, TX  
 Ms. Carol Browner, Administrator, U.S. Environmental Protection Agency, Washington, D.C.  
 Mr. Thomas L. Soto, President, P.S. Enterprises, Santa Monica, CA  
 Ms. Lynda Taylor, Director, Southwest Research and Information Center, Albuquerque, NM  
 Mr. John Bernal, U.S. Commissioner, International Boundary and Water Commission, El Paso, TX.

##### *The Mexican Board Members are:*

Mr. Guadalupe Osuna Millan, Mayor, Tijuana, Baja California  
 Mr. Rogelio Ramos Oranday, Secretary of Social Development, Saltillo, Coahuila  
 Mr. Arturo Herrera Solis, Mexican Commissioner, International Boundary and Water Commission, Cd. Juarez, Chihuahua  
 Ms. Julia Carabias, Secretary of the Environment, Natural Resources and Fisheries, Mexico City

### PUBLIC MEETINGS OF THE BOARD OF DIRECTORS

Public meetings of the Board of Directors are dynamic events, characterized by extensive participation from the public. Conducted in U.S. and Mexican border, the meetings serve as an opportunity for the 10-member Board to interact with border residents. During the meetings, time is made available to the public to provide direct comments to the Board on procedures and project certifications. Thus far, the BECC Board conducted twelve public meetings in the border cities of Cd. Juarez, Tijuana, Brownsville, El Paso, Nogales, Sonora, San Diego, Laredo and Mexicali.

### PUBLIC OUTREACH

As a new border institution, effective public outreach is critical to teach border communities about the BECC and NADBank, their technical assistance opportunities, and to assist with project development. The BECC has conducted numerous outreach meetings and participated in meetings and conferences border-wide.

Additionally, the BECC publishes a monthly newsletter, called BECCNEWS, to provide updates on BECC projects and activities. The BECC communicates regularly over the internet by means of an electronic server called BECCNET, which has over 360 subscribers. And, the BECC maintains a website located at: <http://cocef.interjuarez.com>.

BECC meets individually with project sponsors regularly throughout the border region, to guide them in developing project proposals to the BECC.

### A LOOK AHEAD

BECC will continue to work on the compendium of projects that continue to be submitted. Specific focus will be given to provide project development assistance for border communities, especially small communities, to help them address their pressing environmental infrastructure needs.

## STATUS OF CERTIFIED PROJECTS

*To date, the BECC has certified 16 projects with a total estimated cost of \$230 million, to benefit more than 3.6 million people. (Eight projects are located in the United States; eight in Mexico.) The status/advancement of each project is described below.*

### **WATER TREATMENT PLANT IN BRAWLEY, CA, \$25 MILLION.**

The project will replace the city's existing water treatment plant, with a modern facility that will supply cleaner water to enable the city to meet both federal and state standards for water quality. The project has a capacity of 660 liters per second with the capability to expand. The project will benefit 24,000 residents. (NADBank financing approved.)

**ADVANCEMENT:** Certified in September 1995, financing for the project was approved by the Bank in December 1996 after much local public debate over the rate issue. The City of Brawley is bidding out the project in five phases to keep project costs down. Currently, the city is completing the first three phases which includes mass excavation (98% complete), reservoir (70% complete), and distribution lines (86% complete). By September 100% of the work should be awarded to finish the final two phases of the project including a pump station and new processing facility. Design for the processing facility is complete. As a complement to the Bank's financing, a water and sewer line survey in Brawley will be performed with NADBank IDP assistance.

### **WATER SUPPLY AND SEWAGE COLLECTION PROJECT, MERCEDES, TEXAS, \$4.1 MILLION.**

The City of Mercedes, with a population of about 14,000, currently has water treatment, water distribution, and wastewater collection facilities that are operating close to design capacity, which restricts the city in its ability to provide service to new residential and commercial users. The project consists of: 1) expansion of the water treatment facility from 3 to 4.5 mgd; 2) extension of the water supply lines; 3) improvements to the sewer system; 4) drainage improvements; 5) construction of an elevated 500,000 gallon storage tank (1,893 m<sup>3</sup>); and 6) relocation of an existing irrigation canal. The project is enhanced by work financed by the Texas Water Development Board (TWDB) to extend water and sewer services to the colonias. (NADBank financing approved.)

**ADVANCEMENT:** Certified in November 1996, Mercedes celebrated its groundbreaking ceremony to begin construction on May 23, 1997. NADBank has served as an investment bank and direct lender for the project to complement the financial package for the project from the TWDB, Economic Development Administration, and the Rio Grande Valley Empowerment Zone Corporation. The project will serve as a model for projects requiring interim financing from the NADBank with permanent financing from the TWDB. The NADBank will loan \$1.87 million to the project for interim finance. The BECC provided a technical assistance grant to the city to complete its project proposal. The NADBank will provide additional assistance to the city through the IDP for an inventory and technical evaluation of water lines and system assets.

#### **WATER SUPPLY AND DISTRIBUTION PROJECT (PHASE I), NOGALES, SONORA, \$39 MILLION.**

This integral project finds a solution to the continuous problems with water supply and distribution in Nogales, Sonora. The phase I project includes the rehabilitation of the existing water lines, which currently lose 40% of the water supply through the antiquated distribution system, construction of 33 kms of distribution lines, improvements in the efficiency of pumping, and construction of elevated water tanks. The project will benefit 200,000 residents.

**ADVANCEMENT:** Certified in January 1996, the construction on the Los Alisos aqueduct for the project has begun and is 18% complete, with a \$8.7 million grant from the National Water Commission, appropriated by President Zedillo. In 1996 the NADBank approved issuing a letter to the project sponsor indicating the Bank's intent to consider partial financing once the privatization process had taken place. The system operator is currently in the process of privatizing the facility and signing a contract with a private firm to complete the rest of the project and the financing process. The BECC provided a technical assistance grant to the city to complete the project's financial analysis for certification. The NADBank, through its IDP, has agreed to perform a line survey and to provide management information system hardware, software and training. The goal is to work in a coordinated effort under IBWC's Minute 294 to consolidate the water and wastewater projects of Nogales, Sonora and Nogales, Arizona.

#### **UPGRADE OF WATER AND WASTEWATER TREATMENT FACILITIES, DOUGLAS, ARIZONA, \$2 MILLION.**

The project will improve the water distribution and wastewater collection system, including water main improvements, new wastewater interceptor lines, extensions of water lines to the Fairview Colonia and extensions of wastewater lines to Sunnyside Colonia, both adjacent to the city. The project will benefit 1,250 residents.

**ADVANCEMENT:** Certified in January 1996, the project called for grant funds only. The City of Douglas has completed the construction of the sewer collection system in the Sunnyside colonia and has begun the water main improvements for the Fairview area. The NADBank has structured an agreement with the city to perform a water and wastewater rate study that will be used to determine an affordable rate structure for a proposed expansion project that will be seeking BECC certification in the future.

#### **WASTEWATER TREATMENT PLANT FOR THE FINSA INDUSTRIAL PARK, MATAMOROS, TAMAULIPAS, \$1 MILLION.**

The project will provide wastewater treatment for municipal wastewater generated by the more than 22,000 employees within the industrial park. The project includes the development of a Master Plan, to provide wastewater treatment services for several colonias adjacent to the industrial park. (NADBank financing approved.)

**ADVANCEMENT:** Certified in January 1996, the project was completed in January 1997. Through the public participation process, this private project sponsor made a \$50,000 commitment of in-kind services to the colonias surrounding the Industrial Park. They agreed to invest their resources in a water supply/wastewater treatment study for the area. This commitment is being realized in coordination with Matamoros' water operator.

**ON-SITE SELF-HELP WASTEWATER TREATMENT SYSTEM  
FOR THE COLONIAS OF EL PASO COUNTY, TEXAS, \$213,000.**

Sponsored by the El Paso Interreligious Sponsoring Organization (EPISO), the on-site self-help project will provide zero-interest loans to help 180 colonia families properly install septic tanks and treat household sewage. The innovative project is a cooperative effort among EPISO, the University of Texas at El Paso (UTEP), and the colonia families themselves to build septic systems.

**ADVANCEMENT:** Certified in July 1996, with existing resources from the Levi Strauss Foundation and a small grant from General Electric, EPISO, UTEP and the colonias families have installed 23 septic systems, or an average of 2-3 per month since certification. The BECC and NADBank are actively helping EPISO pursue other funding sources to complete the project.

**WASTEWATER REUSE PROJECT, EL PASO, TX, \$11.7 MILLION.**

Treated wastewater will be reused for irrigation and industrial uses in Northwest El Paso. The project will also lead to reduced dependence on underground water reserves shared by both countries. The water reuse system capacity is 66 liters per second and will benefit 90,000 residents.

**ADVANCEMENT:** Certified in November 1995, the El Paso Water Utilities has received funding for its project from three sources: local improvement funds, State Revolving Funds, and Bureau of Reclamation funds. BECC certification helped the water utility secure the \$3.5 million grant from the Bureau of Reclamation. Design for the project has been completed. Presently, the water utility is advertising the construction for the first phase of the project, which will include a reservoir, pump station and conveyance lines. Construction began on August 5<sup>th</sup>.

**WATER SUPPLY AND WASTEWATER TREATMENT PROJECT, NACO, SONORA, \$1.03 MILLION.**

The project will provide a comprehensive solution to existing water supply, wastewater collection and treatment problems and eliminate wastewater flowing into the State of Arizona. The project will enable the city of Naco to address the low efficiency of the equipment for the pumping and distribution of water, provide micro and macro metering, optimize the utilization of the sewer system, and provide institutional capacity to conserve water and operate and maintain the system. (NADBank financing approved.)

**ADVANCEMENT:** Certified in April 1996 with a preliminary cost estimate of \$654,000. The project proposal was completed with technical assistance from the BECC. Since certification, the cost estimate for the project has risen to \$1.03 million. Based on original estimates, Mexico's National Water Commission has committed \$315,635 for the project, for which the state government of Sonora has prepared bidding packages. Also, the NADBank approved financing of \$180,000 and the EPA agreed to provide \$300,000 in grants. Currently, the NADBank is in the process of obtaining additional financial assistance for this project. As a complement to financing, assistance from the NADBank's IDP was authorized to update the Naco water utility's user register and provide management information system hardware, software and training.

#### **SANITARY LANDFILL PROJECT, PUERTO PEÑASCO, SONORA, \$1.7 MILLION.**

The proposed sanitary landfill project for Puerto Peñasco will replace an existing open-air dump that experiences frequent fires due to an uncontrolled release of methane gas. Presently, the city collects

50 tons/day of domestic and commercial solid waste, from five collection routes with weekly service. The project will benefit the 27,200 population of Puerto Peñasco.

**ADVANCEMENT:** Certified in November 1996, the state government is in the process of defining a first phase of the project with a cost of \$850,000. The state government has committed \$425,000 for construction of the first phase of the project. The City of Puerto Peñasco is expected to apply to the NADBank for a loan to cover the remaining \$425,000. Once components of the first phase are defined, bids for construction will be sent out and construction on the project may begin in forty days. The BECC provided a technical assistance grant to the city for a rate model, institutional strengthening and project proposal. The NADBank's IDP will assist in performing a study of solid waste regulations, institutional organization and solid waste collection and transportation.

#### **SANITARY LANDFILL PROJECT, AGUA PRIETA, SONORA, \$1.9 MILLION.**

The proposed sanitary landfill project for Agua Prieta, Sonora, will provide municipal solid waste collection and disposal services for the Agua Prieta community of 56,000 people. It is estimated that presently about 80 tons/day of solid waste is generated from domestic, commercial, and other sources. The maquiladora industry generates about 6 tons/day. The current open-air dump has a remaining useful lifetime of only 18-24 months.

**ADVANCEMENT:** Certified in November 1996, construction for the project will be carried out in phases that are still being defined. SEDESOL has already approved \$262,500 for a first phase costing \$525,000. The City of Agua Prieta has applied to the NADBank for a loan of the same amount. Bids for application of the SEDESOL financing are presently being prepared. The BECC provided a technical assistance grant to the city for a rate model, institutional strengthening and project proposal. The NADBank has authorized IDP assistance to the city to perform a study of solid waste regulations and institutional organization.

#### **WASTEWATER TREATMENT PROJECT, SOMERTON, ARIZONA, \$1.5 MILLION.**

The City of Somerton has a population of approximately 6,000 and utilizes a waste stabilization pond system with the capacity to treat up to 400,000 gpd. The system is currently operating at capacity and experiences problems meeting the NPDES water quality requirements established by EPA. The City will install a new treatment system, with several advantages, including a minimal production of biological solids, which substantially reduces the cost of handling and disposing of sludge.

**ADVANCEMENT:** Certified in November 1996, the city has completed the bidding for construction and is in the process of selecting the most qualified company. The BECC provided a technical assistance grant to the city for a study of project alternatives.



The project will treat wastewater that is currently being discharged to the Ensenada Bay without adequate treatment. The project will enable this port city to promote clean beaches, thus strengthening its tourism industry. It has a capacity of 500 liters per second and will benefit 250,000 residents.

**ADVANCEMENT:** Certified in September 1995, CESPE, the system operator for the Ensenada project, has decided to modify the project, which will require the project to be re-evaluated by the BECC for certification in the future, in order to qualify for NADBank financing. Mexico's National Water Commission is waiting for CESPE to determine the direction of the project in order to complete corresponding studies.

**PARALLEL CONVEYANCE SYSTEM AND REHABILITATION OF THE  
SAN ANTONIO DE LOS BUENOS PLANT, TIJUANA, BAJA CALIFORNIA, \$18 MILLION.**

The project includes the construction of a pump station and 16 km collector that will allow the city to better manage its sewage flows. The project will allow needed repairs to the existing conveyance system and will help avoid sewage runoff into the Tijuana River. The project includes the rehabilitation and expansion of the wastewater treatment plant at San Antonio de los Buenos. The project will benefit more than 1 million Tijuana residents.

**ADVANCEMENT:** Certified on June 18, 1997, the project will pursue a \$16 million grant from the EPA and a \$2 million loan from the NADBank. Certification of the project was made possible by a technical assistance grant from the BECC to enhance community participation and complete the project proposal.

**WASTEWATER TREATMENT SYSTEM, ALTON, TEXAS, \$14.8 MILLION.**

The project includes the construction of a wastewater collection system for the city and its surrounding colonias. Collected wastewater will be treated at McAllen's wastewater treatment plant. The project will benefit the 3,000 residents.

**ADVANCEMENT:** Certified on June 18, 1997, the project will be financed by resources from the Texas Water Development Board and U.S. Department of Agriculture, and will pursue additional funding from the NADBank. The City of Alton awarded the contract for construction in June 1997, to begin construction in July 1997.

**SOUTH BAY RECLAMATION PLANT, SAN DIEGO, CALIFORNIA, \$99.6 MILLION.**

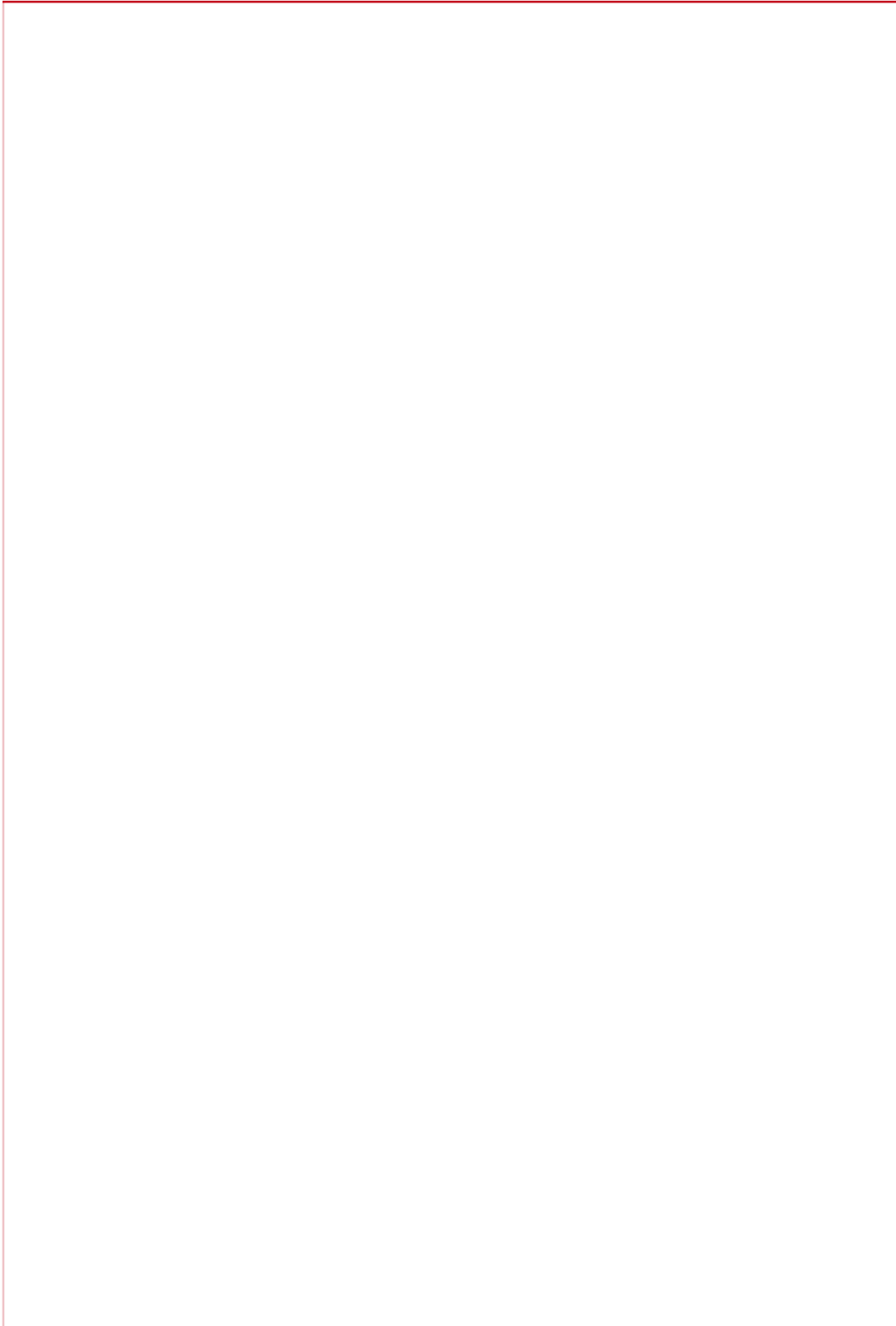
The project will allow treated wastewater in the southern part of the Metropolitan Wastewater System to be reused in San Diego, Imperial Beach, Chula Vista, National City, and areas outside of San Diego county. The plant has an initial treatment capacity of 7 million gallons per day (mgd), with the capability to expand. The project will decrease the burden on the already overloaded treatment facility at Point Loma, and lessen the city's use of primary water from its source for certain activities.

**ADVANCEMENT:** Certified on June 18, 1997, the project will pursue a grant from the EPA to cover a portion of the project costs.

**ECOPARQUE, TIJUANA, BAJA CALIFORNIA, \$170,000.**

This project consists of the expansion of a pilot project set up to treat wastewater to secondary standards for reuse as irrigation to green areas. The project will benefit 21,000 residents of the Otay area.

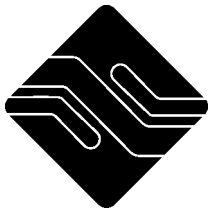
**ADVANCEMENT:** Certified on June 18, 1997, the project will seek grant funding from a variety of sources.



## NORTH AMERICAN DEVELOPMENT BANK (NADB)



THE NADBANK IS A BILATERALLY-FUNDED, INTERNATIONAL ORGANIZATION, IN WHICH MEXICO AND THE UNITED STATES PARTICIPATE AS EQUAL PARTNERS.



# NORTH AMERICAN DEVELOPMENT BANK

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## GENERAL OVERVIEW

### ORIGINS

The North American Development Bank (NADB) and its sister institution, the Border Environment Cooperation Commission (BECC), were created as part of the North American Free Trade Agreement (NAFTA) process. The NADB operates under the November 1993 Agreement Between the Government of the United States of America and the Government of the United Mexican States Concerning the Establishment of a Border Environment Cooperation Commission and a North American Development Bank (the "Charter"). Established in San Antonio, Texas in November 1994, the NADB is a bilaterally-funded, international organization, in which Mexico and the United States participate as equal partners.

The NADB has a binational Board of Directors consisting of six Members.

#### *From the United States:*

Ms. Carol Browner, Administrator, U.S. Environmental Protection Agency, Washington, D.C.  
Ms. Madeleine Albright, Secretary of State, Washington, D.C.  
Mr. Robert E. Rubin, Secretary of the Treasury, Washington, D.C.

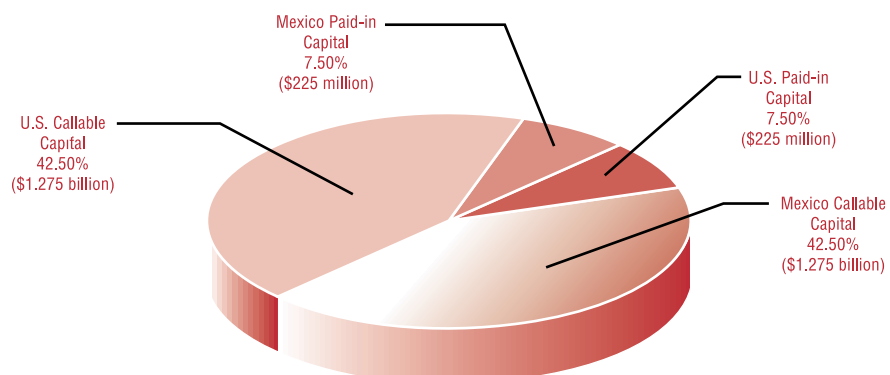
#### *And from Mexico:*

Mr. Jose Angel Gurria, Secretary of Finance and Public Credit, Mexico City  
Mr. Herminio Blanco, Secretary of Trade and Industry, Mexico City  
Mr. Carlos Rojas, Secretary of Social Development, Mexico City

### CAPITAL

The NADB's authorized capital of three billion dollars is subscribed in equal shares by the two governments. Fifteen percent of this capital, 450 million dollars, is subscribed as paid-in capital, while the remainder is subscribed as callable capital.

### Bank Capitalization After Full Subscription



***Paid-in capital*** consists of actual cash funds contributed to the NADB by the two governments. ***Callable capital*** is composed of funds which the governments must provide to the NADB in the future, if required, to meet outstanding debt obligations of the NADB or guaranties issued by the NADB. Callable capital, therefore, is not a cash contribution.

It is anticipated that the NADB's cost of borrowing will be at a rate slightly higher than U.S. Treasury rates (for similar maturities), at least during its initial years of operation. The cost of borrowing and bank operations, plus credit risk coverage, determine the rate at which the NADB can lend.

## MISSION

The NADB and the BECC were created by the United States and Mexico in a joint effort to preserve and promote the health and welfare of the border environment and its residents. Specifically, the two institutions were established to promote environmental infrastructure development related to water supply, wastewater treatment and municipal solid waste management in the border region, which is defined in the Charter as the area within 100 kilometers (62 miles) north and south of the international boundary between the two countries.

The NADB's role is to facilitate financing for the development, execution and operation of environmental infrastructure projects that have been certified by the BECC. To do this, the NADB provides three primary services to border communities:

**FIRST.** As an *advisor and financial strategist*, the NADB provides basic guidance to smaller communities that have neither the experience nor the institutional and financial capacity to prepare infrastructure development options. The NADB can also help all communities, large or small, coordinate the fiscal aspects of their projects in order to ensure that preliminary proposals are complete, financially viable, and the best solution on a present value basis.

**SECOND.** As an *investment banker*, the NADB works to structure the most affordable financial package possible for its clients and seeks ways to reduce financing costs by securing funding from both private and public sources. The NADB and its funding partners are also developing innovative and flexible financing instruments that can be tailored to the specific needs of each border community.

**FINALLY.** As a lender, the NADB provides gap financing for project costs not covered by other funding sources. In this context, the NADB promotes long-term project sustainability, through user fees or other revenue, in order to ensure that utility systems are efficiently operated and adequately maintained and that communities will be prepared to meet future infrastructure requirements without hardship.

## NADB OBJECTIVES

The BECC-NADB process emphasizes that permanent solutions to border pollution problems are possible only through sustainable development, grassroots initiatives, and the coordinated efforts of all interested parties. Based on this philosophy, the NADB is actively pursuing two broad objectives:

**First, the NADB is committed to assisting border communities make a gradual transition from projects that are fully subsidized by grants and government budget allocations to projects that are fiscally sound and locally sustainable.** As part of this transition, the NADB is helping border communities strengthen their financial and institutional capacities so that their approach to environmental infrastructure includes comprehensive long-term planning.

***Second, the NADB is committed to building strong partnerships with stakeholders at every level, including border residents; project sponsors; municipal utility managers; local, state, and federal elected officials; government agencies and programs; non-governmental organizations; and the private sector.***

The NADB firmly believes that by working together and combining resources, real progress can be made toward creating a cleaner and healthier environment along the border for current residents, as well as for future generations.

## **ASSISTANCE PROGRAMS**

The NADB has initiated a broad range of programs and services to facilitate border environmental infrastructure projects. These include the NADB advisory and financial services, and the loan and guaranty program, discussed above. In addition, the NADB has two assistance programs.

### **INSTITUTIONAL DEVELOPMENT COOPERATION PROGRAM (IDP)**

The NADB has created the Institutional Development Cooperation Program (IDP) as a crucial complement to its loan and guaranty program. The IDP assists public utilities achieve effective and efficient operation of their water, wastewater treatment, municipal solid waste, and related services by reinforcing their institutional capacities, and thus create a stronger financial foundation that will support the development of future infrastructure. The NADB Board has allocated \$4 million for the IDP in 1997.

Public utilities that manage water, wastewater, or municipal solid waste located within 100 kilometers of the U.S.-Mexico border are eligible for IDP support. Priority will be given to eligible utilities that have a BECC-certified project or a Step I BECC certification application on file and need institutional strengthening to facilitate certification and financing.

The IDP is a two-phase program. During the initial phase, the NADB can provide personnel and resources for a system evaluation, if necessary, of the eligible utility at no cost to the community. This evaluation could examine infrastructure; technical and operating factors; rate policies and schedules; planning, organization and administration; budget and accounting; finances; and privatization processes. In the second phase, a plan of action based on evaluation results will be devised to address the needs of the utility. Resources may also be allocated to improve information and administrative systems, provide training and enhance other areas that have an impact on the financial structure of the utility.

To date, the IDP has been involved with projects for 24 communities: one system evaluation has been completed; thirteen projects with a combined cost of \$1.7 million are in progress (either under way, being bid, or in final formulation); and applications for ten communities are being reviewed. Of particular note to CalBECC are IDP projects in Brawley, California (a \$40,000 wastewater rate study will be used to develop a financial plan for a proposed wastewater project), and in Mexicali, Baja California (a \$250,000 grant to perform a water line survey, and to develop and install a management information system).



#### BORDER ENVIRONMENT INFRASTRUCTURE FUND (BEIF)

In order to finance its loan and loan guaranty operations, the NADB must borrow from the capital markets; therefore, the terms of its loans and guaranties are market-based. However, because of the high cost of projects, many communities (especially small, poor communities) in the border region cannot afford any credit financing (even at zero interest rate) that is not accompanied, at least initially, by a grant component.

In order to address this affordability issue, the NADB has established the Border Environment Infrastructure Fund (BEIF) to receive, administer and coordinate contributions of grant resources for border environmental infrastructure projects. The BEIF will allow the NADB to develop specific, appropriate and affordable financing packages for border infrastructure projects through the judicious combination of grant funds with its loan and loan guaranty program.

In 1997, the United States Environmental Protection Agency (EPA) made an initial contribution of \$170 million to the BEIF for use in water and wastewater projects on both sides of the U.S.-Mexico border.

The principal objective of the BEIF is to facilitate the expansion and improvement of water and wastewater environmental infrastructure throughout the U.S.-Mexico border region by providing coordinated financial support for the construction of projects and related activities, particularly with respect to financial cooperation among the NADB, EPA and Mexico's Comisión Nacional del Agua (CNA). Only projects certified by the Border Environment Cooperation Commission (BECC) will be eligible for funding. Priority will be given to projects with maximum funding from other sources and where BEIF funding is necessary to complete the financing of the project.

For each project requesting funds, the NADB will perform an analysis to determine whether that project meets the affordability guidelines. Affordability is a measure of a community's ability to pay the cost of its water and wastewater infrastructure. Based on the affordability analysis, BEIF funds will be targeted at communities that could not otherwise afford to develop and execute necessary infrastructure.

Funds may be used for both transition and construction assistance.

Transition assistance may be used:

- to ease a community's adjustment over time to increases in user fees that will be necessary to pay for project construction, operation and maintenance, by providing capitalized interest funds over a 5 to 7 year period; or
- to support regionalization by providing funds to support the debt service costs of regional plants as service levels reach targeted demand in neighboring communities.

Construction assistance may be used to pay construction costs that are not funded by other sources. Construction assistance will be provided after transition assistance has been maximized.

## PROJECTS

The NADB has approved several projects for NADB financing over the last two years. These include a \$25 million water supply plant in Brawley, California, that is now under construction; a \$4 million expansion of a water and wastewater treatment facility in Mercedes, Texas, that is also under construction; an \$830,000 water supply and wastewater improvement project in Naco, Sonora, that will have significant benefits for Arizona residents; and a \$1.1 million wastewater treatment project in Matamoros, Tamaulipas, that showcases the NADB's ability to enter into partnerships with the private sector.

The NADB role in the Brawley project is particularly instructive. The NADB served as an advisor and lead investor for the City of Brawley. For one year after certification of the project, the NADB worked with the community: developing an affordable project; beginning a credit rating process; creating permanent reserves in the financial structure of the project aimed at avoiding future maintenance and development problems; participating in public rate hearings; reviewing and rejecting the project's first construction bids (30% over engineer's budget) as well as helping the City restructure the second construction bids which resulted in a project cost 20% below the original engineer's budget.

As lead investor, the NADB structured the terms of the financing and helped the City bid for a bond underwriter. The NADB also committed to buy up to 30 percent of the bond issue in order to attract other investors. The \$18 million non-rated issue was a success attracting sophisticated institutional investors. The NADB went from an original estimated participation of 30% (\$6 million) to 5.4% (\$1 million), to allow for the additional participation of private sector investors. The transaction closed on January 2, 1997, after being approved for funding on December 2, 1996.

In addition, the NADB is providing assistance to eight other BECC-certified projects, including the Tijuana, Baja California, \$18 million project for construction of a new sewage conveyance system and pump station, and rehabilitation and expansion of a treatment plant. The NADB is participating as an investment banker and direct lender for the rehabilitation and expansion of the treatment plant. The NADB's BEIF participation has been determined as \$16 million, as a complement to the investment commitments related to the International Wastewater Treatment Plant in San Ysidro. The NADB is negotiating with Tijuana's local water utility (CESPT) a loan for an estimated amount of \$2 million plus.

## UNITED STATES DEPARTMENT OF AGRICULTURE (USDA)



THE USDA'S LOAN AND GRANT PROGRAMS ARE AVAILABLE TO RURAL AREAS AND TOWNS WITH POPULATIONS OF 10,000 OR LESS, AND INCLUDE WATER, SEWER, ELECTRIFICATION AND TELECOMMUNICATIONS PROGRAMS.



## RURAL DEVELOPMENT VISION STATEMENT

Partners in helping the people of rural America develop sustainable communities.

FOR PROJECTS IN THE CALIFORNIA  
BORDER REGION, CONTACT:

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### RURAL DEVELOPMENT MISSION STATEMENT

#### IMPROVING THE QUALITY OF LIFE FOR RURAL AMERICANS

USDA has the unique responsibility of coordinating Federal assistance to rural areas of the Nation. The Rural Development mission is to help rural Americans to improve the quality of their lives.

To do this, USDA is working in closely with the private and nonprofit sectors and with state, tribal and local governments to fundamentally change the way government works. With this new philosophy of public partnership...this new relationship among Government, industry, and communities...many positive outcomes for rural Americans are happening daily.

Now and in the future, prosperity in rural America depends on ensuring that residents have a wide range of economic opportunities. Rural America's historic strengths — agriculture and forestry — will continue as one part of the picture.

USDA works to make sure that rural citizens can participate fully in the global economy — with technical assistance and programs that help rural Americans build strong economies to improve their quality of life.

USDA also helps rural communities meet their basic needs by:

- Building **water** and **wastewater** systems,
- Financing decent, affordable housing,
- Supporting **electric** power and **rural businesses**, including **cooperatives**, and
- Supporting **community development** with information and technical assistance.

A new and sharper focus on rural development took shape with passage of the Department of Agriculture Reorganization Act of 1994. Rural development work is focused in three new organizations reporting to the Under Secretary for Rural Development.

- The Rural Utilities Service offers telephone and electric programs along with water and sewer programs.
- The Rural Housing Service includes rural housing programs as well as rural community loan programs.
- The Rural Business-Cooperative Service includes cooperative development and technical assistance, plus other business development programs, and the Alternative Agricultural Research and Commercialization Center.

#### RURAL UTILITIES SERVICE MISSION STATEMENT

The Rural Utilities Service's mission is to serve a leading role in improving the quality of life in rural America by administering its electrification, telecommunications, and water and waste programs in a service-oriented, forward-looking, and financially responsible manner.

The Rural Utilities Service's Water and Waste Loan and Grant Programs provide for investment of funds in the most needy communities for critically needed water and waste facilities. Loan and grants are available to rural areas and towns with populations of 10,000 or less for the construction, replacement, expansion or other improvements of such facilities.

## RURAL UTILITIES SERVICE (RUS) WATER AND WASTE DISPOSAL PROGRAMS

United States  
Department of  
Agriculture Rural  
Development Rural  
Utilities  
Service

*The Rural Utilities Service (RUS) administers a water and wastewater loan and grant program to improve the quality of life and promote economic development in rural America. RUS is a new Agency created in October 1994 by the reorganization of the U.S. Department of Agriculture (USDA). The program was previously administered by the Rural Development Administration and the Farmers Home Administration, which were abolished by the reorganization. At the State and local levels, the program is administered by field offices of Rural Development. RUS is coordinating the Water 2000 initiative, which has as its goal to provide clean, safe, and affordable drinking water to all rural homes by the year 2000.*

### WATER AND WASTE DISPOSAL DIRECT AND GUARANTEED LOANS

**Purpose:** Direct loans may be made to develop water and wastewater systems, including solid waste disposal and storm drainage, in rural areas and to cities and towns with a population of 10,000 or less. Funds are available to public entities, such as municipalities, counties, special-purpose districts, and Indian tribes. In addition, funds may be made available to corporations operated on a not-for-profit basis. Priority will be given to public entities, in areas with less than 5,500 people, to restore a deteriorating water supply, or to improve, enlarge, or modify a water facility or an inadequate waste facility. Also, preference will be given to requests which involve the merging of small facilities and those serving low-income communities. Applicants must be unable to obtain funds from other sources at reasonable rates and terms. The maximum term for all loans is 40 years; however, no repayment period will exceed State statutes or the useful life of the facility. Interest rates may be obtained from Rural Development field offices.

Guaranteed loans may be made for the same purpose as direct loans. They are made and serviced by lenders such as banks and savings and loan associations. Normally, guarantees will not exceed 80 percent on any loss of interest and principal on the loan.

### WATER AND WASTE DISPOSAL GRANTS

**Purpose:** Reduce water and waste disposal costs to a reasonable level for users of the system. Grants may be made, in some instances, up to 75 percent of eligible project costs. Eligible applicants are the same as for loans.

#### TECHNICAL ASSISTANCE AND TRAINING GRANTS

**Purpose.** Make grants to nonprofit organizations to provide technical assistance and/or training to associations located in rural areas and to cities and towns with a population of 10,000 or less. Assistance may be provided to identify and evaluate solutions to water and waste disposal problems, to improve the operation and maintenance of existing water and waste disposal facilities, and to assist associations in preparing applications for water and waste disposal facilities.

#### SOLID WASTE MANAGEMENT GRANTS

**Purpose.** Make grants to public and private nonprofit organizations to provide technical assistance and/or training to associations located in rural areas and to cities and towns with a population of 10,000 or less to reduce or eliminate pollution of water resources, and improve planning and management of solid waste facilities. Assistance may be provided to enhance operator skills in operations and maintenance, identify threats to water resources, and reduce the solid water stream.

#### RURAL WATER CIRCUIT RIDER TECHNICAL ASSISTANCE

**Purpose.** Provide on-site technical assistance to help assure cost effective operation of rural water systems. RUS has assisted rural water systems, via contracting, with day-to-day operational, financial and management problems. The assistance is provided at no charge and may be requested by officials of rural water systems or by Rural Development personnel. It complements supervisory assistance provided by Rural Development personnel.

#### APPLICATIONS

Information about the water and waste disposal programs and advice on how to assemble information to determine engineering feasibility, economic soundness, cost estimates, organization, financing and management matters, may be obtained from Rural Development field offices. These offices are usually listed in local telephone directories under the U.S. Department of Agriculture.

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# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (USEPA)



THE SALTON SEA

PURPOSE
BECC
NADB
USDA
USEPA
CAL/BECC
CAL/EPA
CALIFORNIA
BAJA CA
GRANTS
APPENDIX





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The U.S. Environmental Protection Agency (EPA) actively promotes the sustainable development of border infrastructure in California-Baja California. Specifically EPA supports *water and wastewater projects* through BECC's *Project Development Assistance Program* (PDAP) and NADBank's *Border Environment Infrastructure Fund* (BEIF).

In FY 96 and FY 97, The U.S. Congress appropriated to EPA \$200 million for border water and wastewater infrastructure. EPA distributed these funds in the following manner:

\$ 170 million	NADBank's BEIF
\$ 10 million	BECC's PDAP
\$ 17 million	EPA's Border Tribal Program
\$ 3 million	Contingencies and Miscellaneous

EPA utilizes BECC and NADBank for disbursement of border infrastructure grants because the two organizations provide a forum for developing environmentally-sensitive, financially feasible infrastructure projects. A shared long-term objective of EPA, NADBank, and BECC is the development of self-sustaining water and wastewater systems.

### PROJECT DEVELOPMENT ASSISTANCE PROGRAM (PDAP)

EPA is working aggressively with BECC to establish the PDAP program. EPA has awarded BECC \$10 million in grants to encourage the sound development of water and wastewater projects on both sides of the border through PDAP. To access PDAP grants, the project sponsor must demonstrate a need for technical assistance and be a likely candidate for BECC certification. EPA is involved in the disbursement of these grants only when the contract amount exceeds \$500,000. BECC will submit quarterly and annual financial reports for EPA's review.

### BORDER ENVIRONMENT INFRASTRUCTURE PROGRAM (BEIF)

Under a cooperative agreement with NADBank, EPA will make \$170 million in grants available to the BEIF and will allow NADBank to administer these funds to support EPA-approved water and wastewater projects. These grants are intended to supplement funding from other sources in order to complete a project's financial package. BEIF funds are available only after all other financing options have been expended. EPA has developed the following project selection criteria for BEIF funds:

- (1) A project must address a priority human health or ecological issue. Projects with the most impact will receive priority.
- (2) A project must have U.S.-side benefits. Projects with benefits on both sides will receive priority.
- (3) A project must be BECC-certified.
- (4) Projects that have maximum funding from other sources and that need BEIF funds only to complete their financing will receive priority.
- (5) Adequate planning and operation and maintenance provisions are prerequisites.
- (6) Only community/municipal infrastructure is eligible.
- (7) For drinking water, only drinking water quality projects are eligible (i.e. treatment plants and distribution systems). Raw water supply projects are excluded.
- (8) If there is a direct or indirect discharge to U.S. waters, a project must target U.S. water quality norms. Projects can be phased to achieve these targets. Flow reductions must not threaten U.S. or shared ecosystems.

NADBank has developed an affordability protocol based on EPA's affordability guidelines for BEIF assistance. This protocol identifies eligibility criteria for transition and construction assistance. BEIF assistance is possible only if a project's financial burden exceeds the users' ability to pay.

Using the project selection criteria and affordability guidelines, NADBank will formulate a proposal with the appropriate mix of assistance. NADBank will submit the proposal with an affordability analysis and a sensitivity analysis to EPA. EPA retains final approval as to which projects will be funded. EPA will provide NADBank with a written response for each proposal. Upon receipt of EPA's final decision, the Bank will provide written notice of such decision to the project sponsor and copies to EPA, the state, and the community.

Because the disbursement of EPA funding is considered a federal activity, NEPA must be completed prior to the disbursement of BEIF funds. EPA has been involved in the development of NEPA documents which disclose impacts in the U.S. from Mexican projects. In the future, environmental assessments developed for BECC-certification will include transboundary impacts. EPA will be responsible for ensuring the analyses of these impacts comply with its NEPA requirements.

NADBank is responsible for the oversight of construction and operation of the water and wastewater facilities funded with BEIF funds. EPA will review reports on this oversight.

#### **BORDER TRIBAL PROGRAM**

EPA has reserved \$17 million to build drinking water and wastewater treatment infrastructure on Indian reservations and other tribal lands in the U.S. This program provides direct grants to the Indian Health Service or appropriate tribal organization. EPA Region IX manages this program. All of the tribal money has been allocated to specific projects.

#### **OTHER EPA BORDER ACTIVITIES**

Because of its position on the BECC Board of Directors, EPA votes on the certification of a project. EPA is the only U.S. or Mexican agency on the Board of both BECC and NADBank. EPA, therefore, helps to integrate the environmental concerns of BECC and the financial concerns of NADBank into a consistent border development strategy. A consistent border strategy is also at the heart of EPA's involvement in Border XXI which is a binational effort to coordinate the U.S. and Mexican federal entities responsible for the border environment.

EPA is the U.S. co-chair of the Border XXI Water Workgroup. This workgroup coordinates binational water quality activities in the border area including training and infrastructure projects. The group has focused on activities such as the monitoring of the Lower Colorado River and the New River. Public involvement and outreach for Border XXI is managed primarily through EPA's San Diego Border Liaison Office. This office organizes cooperative environmental, health, and natural resource efforts and provides information to the border population on EPA programs and initiatives.

EPA received specific appropriations from the U.S. Congress for the International Wastewater Treatment Plant for Tijuana's wastewater and for facility planning in Mexicali and Nogales. IBWC is managing these projects with EPA oversight.



# CALIFORNIA BORDER ENVIRONMENTAL COOPERATION COMMITTEE (CAL/BECC)



A FOCUS OF CAL/BECC IS TECHNOLOGY TRANSFER BETWEEN ALL THREE CALIFORNIAS.



## CALIFORNIA BORDER ENVIRONMENTAL COOPERATION COMMITTEE (CAL/BECC)

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### BACKGROUND

Following the adoption of NAFTA, and the creation of the BECC and the NADBank, it was recognized that there would be advantages to Baja California and California from cooperating on border environmental infrastructure projects. At the July, 1994 meeting of the Commission of the Californias, the Governors of California, Baja California, and Baja California Sur signed a Joint Resolution which created the California Border Environmental Cooperation Committee (Cal/BECC). Cal/BECC is charged with identifying and promoting mutually agreed upon environmental infrastructure projects along the California-Baja California border region, and through the BECC and the NADBank, seeking government and private sector funding for those projects that are of joint benefit.

### PURPOSE OF CAL/BECC

Cal/BECC is not intended to be an additional step or filter for projects seeking BECC certification. Cal/BECC's primary purpose is to assist in facilitating the BECC and NADB processes for local projects and it also acts as an advocate in what at times can appear to be a complex political process. The ten states that make up the US-Mexico border vie for monies allotted by the BECC and the NADB. Communities seeking BECC certification and NADB funding must be able to meet several criteria elements, which can add to planning costs, a burden at times for smaller communities. To that end, Cal/BECC seeks out potential projects and makes the initial contact, thereby providing guidance and support. Since many organizations can be involved in certification of a project, California has sought to streamline the process and avoid duplication of efforts. In 1997 the California Border Infrastructure Group (CBIG) was formed. CBIG is made up of representatives from USEPA, BECC, NADB, USDA and Cal/BECC. The group meets regularly and discusses strategies and best available funding resources for California projects seeking certification. Additionally, the forum also gives members an opportunity to provide constructive input on existing processes, programs and methodology. CBIG is an example of Cal/BECC's commitment to maximizing resources and communication, avoiding duplicative efforts and the need to act in concert and cooperatively with other agencies in streamlining processes, which in turn provides communities an expeditious BECC certification.

California is also working closely with Baja California and other U.S. border states to develop a small communities initiative that will allow them to access BECC and NADBank programs and funding.

### COMPOSITION OF CAL/BECC

Cal/BECC has a seven member Board of Directors.

**Three are from California:** Mr. Peter M. Rooney, Secretary of California Environmental Protection Agency, Mr. Lee Grissom, Secretary of Trade and Commerce, and one Public member from the Commission of the Californias, Ms. Joan Milke-Flores.

**Three are from Baja California:** Lic. Jorge Gallego Salas, Secretary of Economic Development, M.C. Adolfo Gonzalez Calvillo, Director of Ecology and Ing. Fernando Aveces Salmon, Secretary for Public Works and Human Settlements.

**One is from Baja California Sur:** Lic. Ramon Salido Almada, Secretary of Economic Development.

The Chair rotates annually between California and Baja California. Currently, the chair is held by Mr. Peter M. Rooney, Secretary for Cal/EPA.

## ACCOMPLISHMENTS

Since its inception in 1994 Cal/BECC has met eleven times to discuss areas of mutual interest in a frank and straightforward manner at a policy maker's level. The forum has established a relationship of trust and respect with our border neighbors that has promoted a higher level of binational cooperation. As a result of these meetings, the following accomplishments were achieved:

- Established state-to-state direct line of communication at cabinet and staff levels;
- Discussed environmental infrastructure projects, issues and barriers on both sides;
- Informed and advised each other of changes in state processes and procedures;
- Jointly supported six projects to the BECC; all were certified;
- Provided a forum to educate each other on organization, function and responsibilities of agencies in the environmental arena.

The first project to be certified by the BECC was the City of Brawley Water Treatment Plant. The need for a new water treatment plant in the City of Brawley became evident when the City was issued a notice of violation by the Department of Health Services for failure to meet drinking water and environmental management requirements, largely due to the city's growth. The old treatment plant was designed for a 7.5 million gallons per day (MGD) capacity and is currently operating at its physical capacity of 12.5 MGD. After certification, funding was secured through the NADB. Through concerted efforts the NADB served as a financial advisor and lead investor by committing to buy up to 30% of the bond issue. Successful issue resulted in the NADB purchasing \$ 1 million dollars in bonds. The original estimate on this project was \$24.8 million. To date, Brawley has worked diligently at moving forward with this project. Very recently, it was able to come in at an astounding 20% below the original estimate by creative sub-contracting on the project. This in turn has led to a higher number of contracts being awarded to local companies based in or near the community. Additionally, the idea of "regionalization"- use of one water or wastewater treatment plant that serves several neighboring communities- is being studied in the Imperial Valley. Regionalization, allows several communities to maximize their resources, share a common facility and helps reduce project costs.

In 1996-97 Cal/BECC under the direction of Mr. Adolfo Gonzalez Calvillo, supported and acted as an advocate for three projects seeking BECC certification. These included the Parallel Conveyance Project of the Sanitation System in Tijuana, Baja California, Eco-Parque water reclamation project in the City of Tijuana and the City of San Diego's South Bay Reclamation Plant.

During this period, the first Bi-State Environmental agencies Information exchange also took place in Tijuana Baja California. This first of its kind forum allowed Cal/EPA Boards and Departments and certain federal agencies to teach and learn from their Mexican counterparts on their agencies' respective role, function and responsibilities. The exchange provided working professionals a network to begin discussions on environmental issues of mutual interest and concern. And, at the same time to observe how current projects coincide or dove-tail into USEPA's Border XXI program.

In 1997-98, the chair rotated and California assumed the role. Under the direction of Mr. Peter M. Rooney, Cal/BECC supported and provided technical assistance for the New River Sanitation project in the City of Mexicali, Baja California. The project was certified in early 1998 and is estimated to cost approximately \$50 million dollars to bring to fruition. This project marks a new beginning in the clean-up of the New River. For the remainder of the term, it is anticipated that three more projects in California will be seeking BECC certification and some type of grant funding. Cal/BECC in association with other agencies and organizations, is committed to providing assistance to project proponents

to ensure they fulfill the necessary requirements to receive BECC certification and the fullest extent of funding from NADB and other funding sources.

**OTHER PROJECTS THAT HAVE HAD CAL/BECC'S SUPPORT ARE:**

- 1) Environmental Improvement and Urban Development Project for Phase III of the Tijuana River in Tijuana,
- 2) Rehabilitation and Improvement of the Water Delivery System for the City of Calexico, California

Cal/BECC attempts to be represented at the NADBank and BECC Public meetings to provide input on issues impacting the Californias. Regardless if a project is seeking certification, attendance at these meetings at times can be crucial due to the many issues covered which can affect policy and procedures in California.

To meet the increasing demand for involvement by California in working with BECC, NADBank, and various Federal agencies, a Cal/BECC Coordinator position was created within the California Environmental Protection Agency organization at the Water Resources Control Board. The Coordinator monitors BECC activities in the ten border states and Mexico, acts as coordinator for Cal/BECC, as environmental liaison between California and Mexico, and provides administrative support by assisting the federal, state and local government, business and citizen groups in the Development of projects for BECC certification and NADBank funding.

Cal/BECC has already established a track record of success and credibility with BECC and NADBank, who hold it up as a model of cooperation for the other states. In the coming year, Cal/BECC will continue to work closely with the BECC and NADBank, local agencies and other state agencies on both sides of the border to identify environmental infrastructure projects, promote projects from the Californias, provide assistance, and support them through coordination with BECC and NADBank. Cal/BECC has strengthened the relationship among the Californias, improved lines of communication and created a forum for cooperation on environmental issues of mutual interest.

**CAL/BECC IS CURRENTLY ADDRESSING OTHER ENVIRONMENTAL ISSUES THAT INCLUDE:**

- New River clean up
- Tire recycling along the Border
- Training and public education opportunities
- Establishing Bi-State communication at all levels

Cal/BECC also acts as the central coordinating axis for the California Border Coordinators Group. A group consisting of approximately 14 State Boards and departments that participate in projects along the border region.

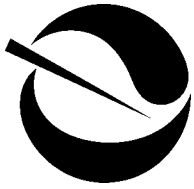


## CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY (CAL/EPA)



CAL/EPA IS RESPONSIBLE FOR COORDINATING AND PRIORITIZING THE STATE'S EFFORTS TO PROTECT THE ENVIRONMENT





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### DISCUSSION

Created in July 1991 through an executive reorganization of State government by Governor Pete Wilson, the California Environmental Protection Agency unifies the state's environmental authority under a single accountable, Cabinet-level agency. This reorganization brings together three new entities- the Department of Pesticide Regulation (formerly part of the Department of Food and Agriculture), the Department of Toxic Substances Control and the Office of Environmental Health Hazard Assessment (both formerly parts of the Department of Health Services)-with the existing environmental regulatory boards: the Air Resources Board, Integrated Waste Management Board, State Water Resources Control Board and nine Regional Water Quality Control Boards.

The California Environmental Protection Agency (Cal/EPA) is responsible for coordinating and prioritizing the State's efforts to protect the environment. The Agency emphasizes environmental regulation that is clear, understandable and uniform.

The specific goals of the Agency are to:

- Focus on those activities, processes and substances presenting the greatest risks to public health and the environment;
- Set risk-based priorities using the best, most consistent science available;
- Prevent pollution from being created, rather than attempting to control it after the fact;
- View environmental protection and economic progress as complementary goals;
- Provide vigorous and fair enforcement of the law, not only for public protection, but also to assure that law-abiding businesses are not undercut by unscrupulous competitors; and
- Open the regulatory process for public participation.

The Secretary for Environmental Protection is the administrative head of the Agency and serves as the primary point of accountability, reporting directly to the Governor, for coordination of the State's many environmental protection programs.

## CAL/EPA BOARDS AND DEPARTMENTS

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## Air Resources Board

The Air Resources Board conducts research, monitors California's air quality and sets policies for controlling emissions from mobile sources-cars, trucks, buses and other motor vehicles-and studies topics as diverse as health and crop damage, atmospheric science and new technology.

Maintaining its own independent enforcement program, the Air Board ensures that statewide air quality rules-such as those governing the make up of fuels or limiting motor vehicle emissions-are met.

Working with the Air Board are 34 county and regional air quality control districts. With the support of the Air Board, these districts set emission limits for stationary sources such as factories and power plants and develop local clean air plans. The Air Board also helps the districts enforce local pollution control rules by providing technical staff and sophisticated testing equipment when needed. Local districts issue air quality permits to and monitor emissions from businesses, industries and other stationary sources. The Air Resources Board and local air district programs and policies are designed to lower pollution levels to meet air quality standards and provide a healthy environment for California's residents.

## Office Of Environmental Health Hazard Assessment

Office of Environmental Health Hazard Assessment has the scientific, technical and public health role of assessing the health effects of chemicals in the environment. This Office provides the other Cal/EPA operations with scientific tools, information and advice upon which to base risk management decisions. The Office is also the lead agency for the implementation of the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65).

Distinct programs within the Office focus on assessing the health risks from exposures to chemicals in air, water, food, certain consumer products, hazardous and municipal waste facilities, fish and shellfish and sediments in bay and estuarine waters.

The Office is responsible for:

- Identifying chemicals having the potential for adverse health effects;
- Characterizing the hazards of these chemicals and developing scientific guidelines for hazard identification and risk assessment;
- Providing oversight of regulatory activities and guidance on the public health and scientific aspects of environmental protection, and pesticide worker health and safety; and
- Providing technical and scientific support, consultation and training to state regulators, local government agencies and the public.
- The programs are designed to support efforts by State and local agencies to identify and regulate chemical risks in the environment in order to provide and meet human health and safety standards.

## CAL/EPA BOARDS AND DEPARTMENTS

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### Integrated Waste Management Board

The California Integrated Waste Management Board conducts monitoring, research, planning and education programs to address the State's solid waste management needs.

Recognizing that existing disposal practices cannot meet the growing volume of solid waste, the Board's programs and policies are designed to address California's solid waste disposal dilemma and lessen the demand upon the State's diminishing natural resources by:

- Establishing regulations that meet environmental concerns and provide flexibility to local governments;
- Emphasizing waste prevention, recycling and composting through review of plans and programs developed by local governments;
- Overseeing local efforts to ensure the environmentally safe disposal of waste that cannot be feasibly reduced, recycled or composted;
- Strengthening the market for materials collected in recycling and composting programs;
- Identifying new and innovative waste diversion and management technologies and improve technologies which currently exist; and
- Coordinating state and local activities toward achievement of overall waste management goals.

Because of California's rapid population growth and the declining number and capacity of landfills, state law requires that a 25 percent diversion rate of waste from landfills be achieved by 1995 and 50 percent by the year 2000.

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### Department Of Pesticide Regulation

The California Department of Pesticide Regulation is the primary agency charged with evaluating and mitigating the environmental and public health impact of pesticides as well as enforcing state and federal laws governing the use of pesticides in California whether it be in agriculture, industry, business or the home.

Department objectives are implemented through programs which include pesticide registration, medical toxicology, worker health and safety, environmental monitoring and pest management, pesticide use enforcement and data management. Through these programs, the following are accomplished:

- Pesticide safety and efficacy are scientifically evaluated before
- Businesses that sell or apply pesticides are licensed;
- Pesticide specialists enforce restrictions to ensure safe use of pesticides in the workplace and elsewhere;
- Water, air and soil are monitored for pesticide levels to ensure that residues do not adversely affect public safety or the environment; and
- Imported and domestic produce is tested for pesticide residue to ensure against danger to public health.

Pesticide enforcement activities are carried out at the local level by the County Agricultural Commissioners acting under the oversight of the Department.

The Department's integrated network of programs is designed to ensure that pesticides are used safely in order to protect human health and the environment while providing adequate tools and alternatives for pest management.

## CAL/EPA BOARDS AND DEPARTMENTS

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### Department Of Toxic Substances Control

The Department of Toxic Substances Control is responsible for overseeing the cleanup of hazardous waste sites and for monitoring and regulating hazardous waste transportation, treatment, storage and disposal for California. The Department accomplishes this by implementing and enforcing provisions of the State's Hazardous Waste Control Act, the Hazardous Substances Account Act and pursuant regulations.

The Department's programs cover site mitigation, hazardous waste management, pollution prevention, waste minimization and technology development. Through these programs, the Department:

- Assures appropriate on-site management of hazardous waste by making permit determinations for facilities which treat, store or dispose of hazardous waste;
- Ensures facility compliance with state and federal regulations and takes formal enforcement action when violations are documented;
- Provides regulatory assistance to assist businesses in complying with the hazardous waste statutes and instituting pollution prevention strategies;
- Implements the State's site cleanup laws and participates in the Federal Superfund Program;
- Facilitates public participation in site mitigation and facility management projects; and
- Promotes research of alternative technologies for pollution prevention, waste reduction and hazardous waste cleanup.

The Department's programs for regulating the management of hazardous waste, cleaning up hazardous waste sites and promoting the reduction of hazardous waste are designed to ensure the protection of public health and the environment for all of California.

### BORDER COORDINATOR CONTACT:

**Mr. Bart Christensen**  
*Senior Water Resources Control Engineer*

STATE WATER RESOURCES  
CONTROL BOARD  
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Sacramento, California 95814

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Email: christeb@cwpswrcb.ca.gov

### State Water Resources Control Board

The State Water Resources Control Board has primary responsibility for maintaining water quality in the state through authority of the Porter Cologne Water Quality Control Act. The Board accomplishes this through planning, research and monitoring programs as well as regulatory oversight for the State's surface, ground and coastal waters. The Board also oversees the federal National Pollution Discharge Elimination System (NPDES) program for California.

Anyone wishing to divert water from a stream or river not adjacent to their property does so through application to the State Board. The State Board issues permits for water rights specifying amounts, conditions and construction time tables for diversion and storage. Decisions reflect water availability, recognizing prior rights and fish habitat and whether the appropriation is in the public interest.

Working with the State Board are nine Regional Water Quality Boards which implement programs and policies to ensure pollution prevention, cleanup and containment. To implement these programs, the Regional Boards issue waste discharge requirements and NPDES permits to control discharges from both point and non-point sources. The Regional Water Boards have principal authority for permitting and enforcement of pollution control requirements for any discharge to surface waters, groundwater or wetlands.

The State and Regional Board programs and policies are designed to protect all beneficial uses of California's water including domestic, municipal, agricultural and industrial supply, power generation, recreation, aesthetic enjoyment, navigation and preservation and enhancement of fish and wildlife.

## Border Activities under Cal/EPA

Under the auspices of Cal/EPA and Cal/BECC several activities related to the California-Baja California Border region are being carried out. In addition to working on environmental infrastructure projects, Cal/BECC also acts as the central coordinating axis for the California Border Coordinators Group (CBCG). A group consisting of approximately 14 State Boards and departments that carry out functions along the border.

The CBCG meets quarterly to discuss current projects, upcoming events, and multimedia issues. Issues relating or associated with enforcement are not addressed in this forum, since this area is handled by another group. CBCG attempts to meet biannually with their Baja California counterparts to discuss priorities and concerns of mutual importance and to establish stronger ties and communication amongst both groups.

Nearly all department and boards under Cal/EPA have projects associated with border issues. While this report is intended to focus on environmental infrastructure, the report briefly touches upon some non-infrastructure border projects under Cal/EPA. Below are the highlights of Cal/EPA projects and a number of other State of California Departments. The projects listed below either have occurred, are currently in existence or are planned to take place in the near future:

### Ten US-Mexico Border States Retreat

In November 1997, Cal/EPA was co-host with the Dirección General de Ecología of Baja California for the second Ten US-Mexico Border States Retreat, which took place in Tijuana, Baja California. The Retreat allowed representatives of the State agencies responsible for environmental quality and protection for the States of Arizona, Baja California, California, Chihuahua, Coahuila, New Mexico, Nuevo Leon, Sonora, Tamaulipas and Texas to address common problems in the environmental arena. The Retreat aimed at supporting decentralization efforts in Mexico and facilitate state-to-state technical exchanges and cooperative environmental planning in the region. The representatives agreed that the most effective and efficient means to improve the quality of the environment and to protect the health of our citizens in the border region is through coordination and collaboration. The overall objective of the retreat was to integrate environmental programs in the border region through increased cooperation between the states. At this meeting, the states reported progress on commitments established at the first Ten State Retreat, held in Austin, Texas in November 1996, and identified several priority actions to take these to the next phase. In addition, the states achieved consensus on additional issues and made several recommendations. Previous commitments include: Borderwide information sharing, Pollution prevention and Reduce and Reuse and Recycling programs, Recognition/Awards programs, State-to-state environmental strategic plans and Low cost and clean technologies. Some of these areas were identified as potential commitments to present at the Border Governors Conference for their support.

### Air Quality [ARB]

- Overseeing contract for ambient air quality monitoring in Tijuana
- Monitoring expanded to Mexicali in 1996
- Will provide assistance to Mexico on air pollution control management
- Working on a program for vehicular emission testing on both sides of the border.

### Hazardous Waste Transport and Disposal [DTSC]

- Contracts with San Diego County to monitor import/export of hazardous waste shipments.
- Works with USEPA on binational hazardous waste tracking system.
- Surveillance and enforcement of cross border hazardous waste transport.
- Compliance assistance and pollution prevention support to industries in the border region through workshops

### **Pesticide Episode Response Plan [DPR]**

- Planning a program to respond to human and environmental pesticide exposure incidents in the border area.
- Working with Imperial and San Diego Counties and Mexican agencies to provide training on pesticide use, storage, safety, and illness and illegal importation.
- Planning a Binational Pesticide Information Exchange Workshop, that will enable both countries to exchange technical, program and new technologies information.

### **Public Health, [OEHHA]**

- Advising USEPA on human health risk and exposure problems in the Rio Grande Valley of Texas (funded by USEPA).
- Coordinates with other Cal/EPA agencies on health-related issues in border areas.

### **Solid Waste [CIWMB]**

- Administering USEPA grant to characterize waste in the Tijuana landfill. Could lead to a comprehensive waste management plan for Tijuana and San Diego.
- Established a rapport with the Autonomous University of Baja California and provided technical information workshops and an Integrated Waste Management Course
- Seeking grant monies from USEPA to fund border activities, including bilingual recycling campaign, assessment of used tire piles in Baja California, research of implementing a sustainable development project with used tires (recycling).

### **Water Quality [SWRCB]**

Working with the International Boundary and Water Commission [IBWC] and USEPA in addressing the problem of untreated sewage from Mexico coming into California in the Tijuana River near San Diego and the New River at Mexicali. The San Diego and Colorado River Regional Water Quality Control Boards have been closely involved in their activities. The International Wastewater Treatment Plant to handle excess Tijuana sewage was inaugurated in April 1997.

The SWRCB and the Colorado River Basin Regional Water Quality Control Board (CRBRWQCB) participate in a bi-national technical and policy committees established to develop solutions to long standing New River pollution projects. The CRBRWQCB conducts a major water quality sampling program on the New River in Mexico and Imperial County.

In addition to Cal/EPA agencies working on specific projects, several other State agencies have opened lines of communication with our neighboring country. These include:

- **Office of Emergency Services [OES]**

Hazardous Materials Exercises

California maximized coordination efforts between Local Emergency Planning Committees and local administering agencies by analyzing urban and rural LEPC response plans. A guide was developed from the analyses which includes an instructional video for developing, conducting and evaluating tabletop exercises of plans.

### **United States/Mexico Border Hazmat Planning and Coordination**

California enhanced the initiation of effective coordination of hazardous materials emergency response along the U.S./Mexico border through a needs survey, organization of a binational steering group, provision of training and workshops, and establishment of joint exercises. The end result was a training video.

- **Department of Health Services (DHS)**

Will begin assembling data into a geographic information system (GIS) on changes in environmental quality, population dynamics and health indices over the last 10-15 years in the border counties (Imperial and San Diego) California. This information would then be shared through an integrated border-region environmental health GIS in the years to come.

- **Resources Agency**

The California Environmental Resource Evaluation System (CERES) program is working with the State of Baja California to ensure GIS compatibility and on future collaborative geographic information systems and INTERNET efforts.

- **Department of Water Resources [DWR]**

Currently, the DWR is working on addressing water conservation issues along the California-Mexico border. Several projects including establishing and maintaining automated weather stations in Imperial and San Diego counties will aid in the collection of data that will help local growers develop irrigation schedules for crops and turf grass.

Additionally the DWR is providing technical assistance to communities along the border to implement Best Management Practices under their required Urban Water Management Plan. Also, development and staging of workshops for landscape managers on irrigation management (in English and Spanish) is currently underway.

The DWR is currently working with the United States Bureau of Reclamation and six other agencies on a study to determine the potential use of recycled water in Southern California.

In addition to the projects mentioned above, local agencies, sister cities and non-governmental organizations continuously work directly with Mexican cities and agencies outside of state involvement in addressing environmental issues of mutual concern.

# CALIFORNIA PROJECTS



JERRY SANTILLAN, BRAWLEY'S CITY MANAGER, POINTS TO FUTURE GREEN AREAS THAT WILL VISUALLY ENHANCE THE NEW WATER TREATMENT PLANT.

PURPOSE
BECC
NADB
USDA
USEPA
CAL/BECC
CAL/EPA
CALIFORNIA
BAJA CA
GRANTS
APPENDIX



## City of San Diego

# South Bay Reclamation Projects

### AGENCY JURISDICTION:

- UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
- STATE WATER RESOURCES CONTROL BOARD
- REGIONAL WATER QUALITY CONTROL BOARD

### FOR INFORMATION CONTACT:

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THE CITY OF SAN DIEGO

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- Project (A)** South Bay Reclamation Sewer and Pump Station  
**Project (B)** South Bay Water Reclamation Plant  
**Project (C)** Dairy Mart Road and Bridge Improvements  
**Project (D)** South Bay Secondary Treatment Plant and Sludge Processing Facility  
**Project (E)** South Bay Secondary Sewers, Phase 1

### ENVIRONMENTAL NEED/PROBLEM

The City of San Diego is responsible for the treatment of sewage generated in the greater San Diego area - a 450-square mile region from Del Mar to the north, Alpine and Lakeside to the east, and the Mexican border to the south. The City currently operates one treatment plant, the Point Loma Wastewater Treatment Plant. The Metropolitan Wastewater Department (MWWD) was formed to upgrade and expand the sewerage system. The Department is working to add capacity to our sewage system to accommodate projected increases in wastewater flows, supplement our limited water supply and minimize our dependence on imported water by reclaiming wastewater for beneficial reuse, while ensuring our ocean water quality.

To accomplish these objectives, the MWWD is currently planning, designing and constructing numerous wastewater facilities throughout the City. MWWD's planning horizon is to the year 2050. These improvements will provide wastewater treatment to the metropolitan area for a future estimated population of 2.9 million with an expected wastewater flow of 340 million gallons per day. The current system serves a population of 1.8 million generating approximately 190 million gallons per day.

### SUGGESTED PROJECTS

#### Project (A)

The South Bay Reclamation Sewer and Pump Station is part of the South Bay subsystem and is associated with the South Bay Water Reclamation Plant (SBWRP). This project will divert "reclaimable" quality wastewater from the San Ysidro Trunk Sewer and convey it south to the SBWRP. "Reclaimable" quality wastewater is wastewater with a total dissolved solids content of less than 1,000 mg/l. This project includes a pump station, a 30-inch sewer force main from the pump station to the SBWRP, and an 8-inch interim sludge return line that will convey raw sludge from the SBWRP to the South Metro Interceptor sewer for treatment at the Point Loma Wastewater Treatment Plant.

#### Estimated Cost:

The estimated construction cost is \$21,000,000 and the total project cost is \$27,000,000.

#### Project (B)

The South Bay Water Reclamation Plant is a 7 million gallons per day (mgd), average flow, wastewater treatment plant. This plant will treat the wastewater to tertiary standards for irrigation and industrial use. This plant will provide the additional treatment capacity needed to meet the growing demands of the South Bay/Otay Mesa region and provide a source of reclaimed water to the Tijuana River Valley and the Otay Mesa area. The plant is proposed to be located at the Dairy Mart Road site, adjacent to the international border and the International Treatment Plant.

#### Estimated Cost:

The estimated construction cost is \$76,000,000 and the total project cost is \$96,000,000.

**Project (C)**

The Dairy Mart Road and Bridge Improvements are part of the South Bay subsystem and are associated with the SBWRP. The road and bridge improvements will provide reliable all-weather access across the Tijuana River to the SBWRP and the International Treatment Plant.

**Estimated Cost:**

The estimated construction cost is \$13,000,000 and the total project cost is \$19,000,000.

**Project (D)**

The South Bay Secondary Treatment Plant involves the construction of a 21 mgd conventional activated sludge secondary treatment plant. Process solids from the plant will be sent to the adjacent Southern Sludge Processing Facility for thickening, anaerobic digestion, dewatering and storage. Processed biosolids will be trucked offsite for ultimate beneficial reuse and disposal. This project will provide the additional treatment capacity needed to meet the growing demands of the South Bay/Otay Mesa region and provide relief to the existing South Metro Interceptor Sewer. The plant is proposed to be located adjacent to the South Bay Water Reclamation Plant.

**Estimated Cost:**

The estimated construction cost is \$180,000,000 and the total project cost is \$223,000,000.

**Project (E)**

The South Bay Secondary Sewers, Phase 1 is associated with the South Bay Secondary Plant. This project will divert flow that is currently going north to Point Loma to the new South Bay Secondary Plant. This project includes a pump station and approximately 24,000 feet of 72-inch force main.

**Estimated Cost:**

The estimated construction cost is \$87,000,000 and the total project cost is \$113,000,000.

**CURRENT STATUS:****Project (A)**

The design of the pipeline is expected to be completed by September 1997 and the design of the pump station by December 1997. Construction of the pipeline is scheduled to begin in March 1998. Construction of the pump station is expected to begin in July 1998. The project is expected to be on-line by early 2001.

**Project (B)**

Construction is expected to begin in December 1997 with the project on-line by the beginning of 2001.

**Project (C)**

Construction is expected to begin in January 1998 with the project complete by September 1999.

**Project (D)**

Design is expected to begin in July 1998 with the project on-line by mid-2004.

**Project (E)**

Design is expected to begin in July 1998 with the project on-line by mid-2004.

## County of San Diego

# Water and Wastewater Improvements

### AGENCY JURISDICTION:

- UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
- STATE WATER RESOURCES CONTROL BOARD
- REGIONAL WATER QUALITY CONTROL BOARD

### FOR INFORMATION CONTACT:

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*Program Coordinator*

THE COUNTY OF SAN DIEGO

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**Project (A)** Campo Water And Wastewater Improvements  
**Project (B)** East Otay Mesa Wastewater Collection System

### ENVIRONMENTAL NEED/PROBLEM: WATER QUALITY

#### Project (A)

The border community of Campo, located in south eastern San Diego County, has an existing water and wastewater infrastructure in need of various improvements. Campo is located near the communities of Tecate, United States and Tecate, Mexico and is ideally suited to support NAFTA related border programs.

#### Suggested Project

Campo Water and Wastewater System Improvements

#### Estimated Cost:

Campo Improvements - \$550,000 (includes engineering and design)

### ENVIRONMENTAL NEED/PROBLEM: WATER QUALITY

#### Project (B)

The development of the East Otay Mesa area along the southern United States/Mexico boundary will require development of a backbone wastewater collection system in order for the planned industrial and commercial development of the area to occur. The area is ideally suited for NAFTA related cooperative Border programs.

#### Suggested Project

East Otay Mesa Backbone Wastewater Collection System

#### Estimated Cost:

East Otay Mesa Backbone System - \$8,200,000 (includes engineering and design)

### CURRENT STATUS:

#### Project (A)

Campo - Water and wastewater infrastructure currently exist, but due to its age (40+ years), it is in need of various upgrades.

#### Project (B)

East Otay Mesa - Formation of sanitation district in progress. Specific Land Use Plan adopted for area. Facility Financing Study currently underway. No collection facilities in place. Two discharge interceptor sewers are in place for the western Otay Mesa area which would be used to discharge effluent from the proposed collection system for East Otay Mesa Sanitation District.

## City of Escondido

# Regional Water Reclamation Program

### AGENCY JURISDICTION:

- UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
- STATE WATER RESOURCES CONTROL BOARD
- REGIONAL WATER QUALITY CONTROL BOARD

### FOR INFORMATION CONTACT:

**Ms. Cynthia Ferguson-Salvati**  
*Water Reclamation/  
Conservation Administrator*

### CITY OF ESCONDIDO

Public Works Department  
Utilities Administration Division  
201 North Broadway  
Escondido, CA 92025

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### ENVIRONMENTAL NEED/PROBLEM

#### Project (A) (Potable Water)

The environmental need for developing local water resources is essential to every city in the Californias. Establishing a reliable local water source not only benefits this region but will also help to reduce the demand for importing water from other regions. Like many of the border cities in this region the majority of the water for San Diego County comes from the Colorado River. The Escondido Regional Water Reclamation Program will develop a local water source that will reduce the demand for imported water and by doing so increase the water flow of the Colorado River into Baja California.

In addition to addressing mutual water supply needs, the Escondido Regional Water Reclamation Program will help with the developing of the economic environment in both the San Diego County and in Baja California. This regional program by increasing treatment capacity will provide local businesses, such as Sony that are binational, to expand locally and to create more jobs in both California and Mexico.

#### Suggested Project

In an effort to better provide for regional water needs and reduce the necessity to import water into the region, the City of Escondido is embarking on a regional water reclamation program. It is the intent of this reclamation program to develop a local water supply that would be utilized by regional customers, instead of imported water. The program has the potential to ultimately provide more than 3.5 billion gallons of reclaimed water annually to residents of Escondido and surrounding communities. Agencies that will be able to participate in the regional project included the cities of Escondido, San Diego and Poway, the Olivenhain Municipal Water District (OMWD), the Valley Center Municipal Water District (VCMWD), and the Rincon Del Diablo Municipal Water District (RDDMWD).

Escondido currently owns and operates a 17.5 mgd secondary wastewater treatment plant. Secondary effluent from the plant is discharge into a 14 mile land outfall which ultimately discharges through an ocean outfall. This first phase of the regional reclamation project entails upgrading the existing on-site secondary treatment facilities to treat and distribute 6 MGD of Title 22 reclaimed water.

#### Estimated Cost:

The estimated cost of developing and implementing a project to enhance water supplies and employment in both border communities through the Escondido Regional Water Reclamation Program is \$63.489 million. This cost reflects planning efforts, engineering work, plant and distribution system construction for the water reclamation program.

Funding for the capital costs of this environmental program will be provided by the City of Escondido's new connection fund and customer fund, other agencies, and loans from the State and Federal government.

Debt service and operating costs of the program will be funded by reclaimed water sales revenues, cash reserves and fees from the City's Utilities Enterprise Fund, and funds from the Metropolitan Water District and the San Diego County Water Authority. Agreements for the funding from MWD and the SDCWA have been executed and are in place to commence as soon as the reclaimed water is being produced and used.

## ENVIRONMENTAL NEED/PROBLEM

### **Project (B) (Wastewater Collection, Treatment and Disposal)**

There are numerous wastewater discharges by border communities into creeks and the ocean. Treatment of the wastewater prior to discharge is needed to protect the local environment and environments that are downstream of the discharge. The City of Escondido collects and treats for both Escondido and a portion of the City of San Diego, 15 mgd of wastewater which is then disposed of in an ocean outfall line where the prevailing currents transport it south to Baja California. During intense wet weather periods, there is not enough capacity in the ocean outfall or at the plant to treat the incoming flows to required standards. Consequently, this not adequately treated and unpermitted flow is discharged into the Creek, impacting the lagoon and causing beach closures. An increase in effluent quality and a reduction in discharges is necessary.

### **Suggested Project**

The City of Escondido is required to upgrade its wastewater treatment facility to obtain a permit to discharge into the Creek. A regional water reclamation program to increase treatment to tertiary levels is underway. By implementing the Escondido Regional Water Reclamation program an increase in effluent quality and a reduction in ocean discharges will occur. The program has the potential to reduce ocean discharges by more than 3.5 billion gallons of reclaimed water to residents of Escondido and surrounding communities. Agencies that will be able to participate in the regional project included the cities of Escondido, San Diego and Poway, the Olivenhain Municipal Water District (OMWD), the Valley Center Municipal Water District (VCMWD), and the Rincon Del Diablo Municipal Water District (RDDMWD).

Escondido currently owns and operates a 17.5 mgd secondary wastewater treatment plant. Secondary effluent from the plant is discharged into a 14 mile land outfall, which ultimately discharges through an ocean outfall. This first phase of the regional reclamation project entails upgrading the existing on-site secondary treatment facilities to treat and distribute 6 MGD of Title 22 reclaimed water.

### **Estimated Cost:**

The estimated cost of developing and implementing a project to enhance disposal quality and reduce discharge to border communities through the Escondido Regional Water Reclamation Program is approximately \$63.489 million. This cost reflects planning efforts, engineering work, plant and distribution system construction for the water reclamation program.

Funding for the capital costs of this environmental program will be provided by the City of Escondido's new connection fund and customer fund, other agencies, and loans from the State and Federal government.

Debt service and operating costs of the program will be funded by reclaimed water sales revenues, cash reserves and fees from the City's Utilities Enterprise Fund, and funds from the Metropolitan Water District and the San Diego County Water Authority. Agreements for the funding from MWD and the SDCWA have been executed and are in place to commence as soon as the reclaimed water is being produced and used.

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**CURRENT STATUS:****Project (A)**

The Escondido Water Reclamation Program is ready to begin construction of the reclamation facilities. Engineering design plans and specifications are completed and the City has employed a construction manager to comment on the constructability and begin developing construction bid packages for the project. The project has completed facilities' planning and environmental review and has satisfied both CEQA and NEPA environmental requirements. On-site retrofitting design plans for City of Escondido's reclaimed water customers to assure ability to use the water as soon as it is available have been prepared. The City has constructed \$630,000 worth of reclaimed water distribution piping. Agreements with regional participants for water purchases are underway and are anticipated to be finalized this year.

**Project (B)**

The Escondido Water Reclamation Program is ready to begin construction of the reclamation facilities. Engineering design plans and specifications are completed and the City has employed a construction manager to comment on the constructability and begin developing construction bid packages for the project. The project has completed facilities' planning and environmental review and has satisfied both CEQA and NEPA environmental requirements. On-site retrofitting design plans for City of Escondido's reclaimed water customers to assure ability to use the water as soon as it is available have been prepared. The City has constructed \$630,000 worth of reclaimed water distribution piping. Agreements with regional participants for water purchases are underway and are anticipated to be finalized this year.



## ***Mountain Empire***

# **Jr. - Sr. High School Sewage Treatment Project**

### **AGENCY JURISDICTION:**

- UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
- STATE WATER RESOURCES CONTROL BOARD
- REGIONAL WATER QUALITY CONTROL BOARD
- LOCAL GOVERNMENTAL ENTITIES

### **FOR INFORMATION CONTACT:**

#### *Administrator*

MOUNTAIN EMPIRE  
UNIFIED SCHOOL DISTRICT  
3291 Buckman Springs Road  
Pine Valley, CA 91962

Phone: (619) 478-5197  
Fax: None available  
E-mail: None available

### **ENVIRONMENTAL NEED/PROBLEM**

The Mountain Empire Jr. - Sr. High School complex is located in a valley approximately eight miles east of Pine Valley, California with approximately 900 students and staff. The complex is serviced by a septic system that consists of six septic tanks. The tank sizes are as follows: 1-6,000 gallon, 2-4,500 gallon, 2-1,200 gallon, and 1-1,000 gallon. The environmental need is two fold the elimination of the septic system and the conservation of the underground water supply.

### **SUGGESTED PROJECT**

The sewage treatment plant would eliminate the possible contamination of the underground water supply from nitrates at some time in the future and also conserve the underground water supply by recycling the waste water for the irrigation of the grass and vegetation.

### **ESTIMATED COST:**

\$1,225,000.00

### **CURRENT STATUS:**

Currently discussion only



## ***Tecate Water District***

# **Water Distribution And Wastewater Treatment Plant**

### **AGENCY JURISDICTION:**

- INTERNATIONAL BOUNDARY AND WATER COMMISSION,
- COMISIÓN INTERNACIONAL DE LIMITES Y AGUAS
- UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
- STATE WATER RESOURCES CONTROL BOARD
- REGIONAL WATER QUALITY CONTROL BOARD
- COMISIÓN ESTATAL DE SERVICIOS PÚBLICOS, TECATE
- COMISIÓN NACIONAL DEL AGUA

### **FOR INFORMATION CONTACT:**

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*Chairman*

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### **ENVIRONMENTAL NEED OR PROBLEM**

The groundwater-dependent community of Tecate, California presently operates on wells and septic systems without any conservation or management of the existing groundwater resource. The capacity for unlimited withdrawal of the water resource without basin recharge, together with the threat of septic system failures, contributes to the possibility of groundwater depletion and/or contamination. Water supply is inadequate to meet fire flow demand and the community lacks a treated drinking water source.

### **SUGGESTED PROJECT**

Establishing water and sewer service in the community would protect the limited groundwater resource. Initial steps to achieve a properly managed basin include a groundwater basin study to identify groundwater capacity and quality of water. A Basin Management Plan would be developed to guide ultimate use of the resource, establish withdrawal and recharge rates as well as create conservation measures to be used by existing and future development. Comprehensively planning water and sewer service with an understanding of the groundwater basin characteristics will provide environmental protection while allowing development to proceed in a logical manner consistent with the County General Plan.

### **ESTIMATED COST:**

A groundwater basin study and basin management plan is estimated to cost approximately \$95,000. Development of a water distribution system and wastewater reclamation system, including a reverse osmosis treatment plant and percolation ponds, is estimated to cost \$10,770,000. Also included in the 10.7 million are costs for district pre-formation and land/easement acquisition, as well as capitalized interest and reserve funds for financing the project.

### **CURRENT STATUS:**

Preliminary design has been completed for a water distribution and wastewater reclamation system. However, the project may be moving into redesign to identify more affordable alternatives. Possibilities for a smaller initial system are being explored as are possibilities for a binational project with Tecate, Mexico. Tecate, Mexico is directly adjacent and is served by imported water and currently operates a sewer system. Communications are being initiated to determine the status of water and sewer facilities south of the border and the degree to which a binational project might be feasible.



**BACK COUNTRY IN TECATE, CALIFORNIA**



## Otay Water District Projects

# Capital Improvement Program

### AGENCY JURISDICTION:

- UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
- STATE WATER RESOURCES CONTROL BOARD
- REGIONAL WATER QUALITY CONTROL BOARD

### FOR INFORMATION CONTACT:

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- Project (A)** Otay Water District Capital Improvement Program (CIP) Project No. 071, Recycled Water Pipeline (RecPL) – Telegraph Canyon Road 16-inch.
- Project (B)** Otay Water District Capital Improvement Program (CIP) Project No. 163, Ralph W. Chapman Water Recycling Facility (RWCWRF) – Expansion to 2.6 MGD.
- Project (C)** Otay Water District Capital Improvement Program (CIP) Project No. 178, Recycled Reservoir (RecRes) – Use Area Storage Pond No. 4.
- Project (D)** Otay Water District Capital Improvement Program (CIP) Project No. 288, Lower Otay Storage/Treatment Capacity.
- Project (E)** Otay Water District Capital Improvement Program (CIP) Project No. 289, Helix Levy Storage/Treatment Capacity.
- Project (F)** Otay Water District Capital Improvement Program (CIP) Project No. R052, RecPL – 30-inch, 450 zone, Dairy Mart Road to R002 Connection Point.
- Project (G)** Otay Water District Capital Improvement Program (CIP) Project No. W288, Rancho Del Rey Well.
- Project (H)** Otay Water District Capital Improvement Program (CIP) Project No.'s 187, W258, 083. 187 Pipeline (PL) – Central Area and Otay Mesa Interconnection. W258 Pump Station (PS) – Lower Otay Filtration Plant. 083 Pump Station (PS) – (871-1) High Head Replacement and Relocation.
- Project (I)** Otay Water District Capital Improvement Program (CIP) Project No.'s R034, R060, R061, R062:  
R034: RecRes – Tank No. C, 860 Zone, 2.5 MG (I.D. 7).  
R060: RecPS – Otay Lake Pump Station, 860 Zone, (2,300 GPM) (I.D. 7).  
R061: RecPL – 16-inch, 860 Zone, Otay Lake to Tank No. C (I.D. 7).  
R062: RecPL – 16-inch, 860 Zone, Tank No. C to Otay Mesa Road (I.D. 7).
- Project (J)** Otay Water District Capital Improvement Program (CIP) Potable Water Program.
- Project (K)** Otay Water District Capital Improvement Program (CIP) Recycled Water Program.



**ENVIRONMENTAL NEED/PROBLEM****Project (A)**

There is a need for conserving imported potable water supply. This project will provide recycled water transmission service to a major service area with existing markets and developing markets.

**Suggested Project**

With installation of the recycled water project, existing potable water irrigation demands will be converted to recycled water service. Also, new development activities will be required to provide service to irrigation demands from the recycled water main.

**Estimated Cost:**

\$3,878,000

**ENVIRONMENTAL NEED/PROBLEM****Project (B)**

There is a need to increase recycled water production at the RWCWRF to supply growing recycled water demands, provide for sewage treatment and disposal and maintain financial advantages of providing local sewage handling capabilities.

**Suggested Project**

It will be necessary to expand the RWCWRF to produce additional recycled water to an estimated range of 2.6 MGD to 3.8 MGD. The facility will also provide for local sewage treatment and disposal capabilities for a growing collection area with the added advantage of maintaining lower overall costs to sewage customers.

**Estimated Cost:**

\$7,014,000

**ENVIRONMENTAL NEED/PROBLEM****Project (C)**

In order to conserve imported potable water supply for essential uses and recycled water storage reservoir is needed to store treated sewage water for reuse as recycled for irrigation purposes.

**Suggested Project**

With installation of the recycled water storage project existing recycled water produced can be stored for recycled water irrigation uses. These improvements will be accomplished on an existing unlined earthen embankment structure.

**Estimated Cost:**

\$2,628,000

**ENVIRONMENTAL NEED/PROBLEM****Project (D)**

To obtain and provide water treatment and storage at the City of San Diego's Lower Otay Reservoir system in that normal and emergency water supply can be met during supply shortages and outages from imported water deliveries.

**Suggested Project**

Obtain through purchase and construction by water treatment and storage capacity at the City of San Diego's Lower Otay Reservoir system through an agreement with the City of San Diego.

**Estimated Cost:**

\$17,621,000

**ENVIRONMENTAL NEED/PROBLEM****Project (E)**

To obtain and provide water treatment and possibly storage at the Helix Water District Levy Treatment Plant so that normal and emergency water supply can be met during supply storages and outages from imported water deliveries.

**Suggested Project**

Obtain through purchase and construction of water treatment and possibly storage capacity at the Helix Water District's Levey Water Treatment facilities through an agreement with Helix Water District.

**Estimated Cost:**

\$8,000,000

**ENVIRONMENTAL NEED/PROBLEM****Project (F)**

There is a need for conserving imported potable and raw water supply. This project will provide for the second required source of recycled water to meet existing and future demands.

**Suggested Project**

With the installation of the recycled water project, recycled water from the City of San Diego proposed South Bay Water Treatment Plant will be transmitted to the Otay Water District Central Area system.

**Estimated Cost:**

\$4,820,000

**ENVIRONMENTAL NEED/PROBLEM****Project (G)**

There is a need for additional local water supply to supplement imported water.

**Suggested Project**

There is a ground water supply available in Rancho Del Rey. Development and integration into the District's water system facilities is planned.

**Estimated Cost:**

\$2,777,000

**ENVIRONMENTAL NEED/PROBLEM****Project (H)**

There is a need to connect the existing Otay Mesa and Central Area together to provide reliability, flexibility, improve water quality, lower operating costs, and conserve capital costs through access to existing potable storage and access to water treatment facilities and raw water supply.

**Suggested Project**

These three projects will provide the pumping and transmission facilities necessary to transmit water between Otay Mesa and Central Area and provide the transmission facilities to receive potable water from the Lower Otay Reservoir/SDCWA treatment/storage/delivery systems. Lower operating costs will be achieved with less energy consumption and removing an existing pump station from service. Water quality will be improved within reservoir storage due to improved water transmission through a large reservoir and greater demand.

**Estimated Cost:**

187 - \$13,898,000; W258 - \$2,798,000; 083 - \$3,105,000.

**ENVIRONMENTAL NEED/PROBLEM****Project (I)**

There are existing and future large demands for potable water on Otay Mesa (I.D.7) that can be supplied with raw and/or recycled water.

**Suggested Project**

With the installation of the above described projects raw water and eventually recycled water as well will be available to supply existing demands and future demands in lieu of potable water thus conserving potable water for other uses.

**Estimated Cost:**

R034: \$1,031,000; R060: \$979,000; R061: \$2,100,000; R062: \$2,600,000.

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#### ENVIRONMENTAL NEED/PROBLEM

##### **Project (J)**

There is a need to resolve current potable water transmission storage and pumping deficiencies and provide for expansion of the facilities to accommodate growth.

##### **Suggested Project**

The District has a comprehensive plan to produce, acquire, store, pump, transmit and distribute potable water throughout the entire Otay jurisdiction to upgrade existing facilities and construct new facilities.

##### **Estimated Cost:**

The total estimated cost for the potable water facilities is \$490,000,000.

#### ENVIRONMENTAL NEED/PROBLEM

##### **Project (K)**

There is a need to conserve local and imported water supplies and as a result to reuse recycled water wherever and whenever possible.

##### **Suggested Project**

The District has a comprehensive plan to produce, acquire, store, pump, transmit and distribute recycled water throughout the Central Area and Otay Mesa areas of the District.

##### **Estimated Cost:**

The total estimated cost for the recycled water facilities is \$33,376,000.

**CURRENT STATUS:****Project (A)**

The project is currently in design and construction is anticipated to begin in the spring of 1998.

**Project (B)**

The project is in the long range planning stage estimated to begin 2003.

**Project (C)**

The project is currently in construction and is approximately 50 percent complete.

**Project (D)**

The estimated implementation for plant expansion is 2005. Negotiations for the agreement are continuing.

**Project (E)**

The estimated implementation for plant expansion is beyond 2005. Negotiations for the agreement are ongoing.

**Project (F)**

This project is in the preliminary planning stage with an estimate construction date of the Summer of 2001.

**Project (G)**

The project is in preliminary design and is planned to start construction in the fall of 1997.

**Project (H)**

CIP 187 is currently in final design with construction anticipated to begin in fall 1997. CIP 083 is currently beginning design with construction anticipated to begin summer 1998. CIP W258 is currently in the preliminary design phase with construction anticipated in summer 2000.

**Project (I)**

These project facilities are currently in the preliminary design stage phase. Construction is estimated to begin the summer of 2001.

**Project (J)**

The potable water system program is an ongoing capital investment program over about a forty year period.

**Project (K)**

The recycled water system program is an ongoing capital investment program over about a forty-year period.

## ***Aguadara LLC***

# **Bajagua Water Treatment Plant**

### **AGENCY JURISDICTION:**

- INTERNATIONAL BOUNDARY AND WATER COMMISSION,
- COMISIÓN INTERNACIONAL DE LIMITES Y AGUAS,
- UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
- STATE WATER RESOURCES CONTROL BOARD
- REGIONAL WATER QUALITY CONTROL BOARD
- SECRETARIA DE ASENTAMIENTOS HUMANOS Y OBRAS PUBLICAS,
- COMISIÓN NACIONAL DEL AGUA

### **FOR INFORMATION CONTACT:**

**Mr. Enrique Landa**  
*Managing Member*

AGUA CLARA LLC  
Box 67-5864  
Rancho Santa Fe, CA 92067

Phone: (760) 792-7661  
Fax: (760) 481-7307  
E-mail: None available

### **ENVIRONMENTAL NEED/PROBLEM**

The Tijuana/South Bay San Diego Region faces the problems of properly treating wastewater to avoid health and environmental problems and ensuring reliable long-term supply of water to support future growth. The Tijuana region currently generates about 45 million gallons a day of wastewater. The region grows at approximately five percent per year. The newly constructed International Wastewater Treatment Plant addresses some of these concerns and is able to provide advanced primary treatment. To meet minimum environmental standards, federal law and treaty between the U.S. and Mexico, provides for secondary treatment for 25 MGD of the primary effluent.

### **SUGGESTED PROJECT**

The Bajagua Project involves three basic elements that will address meeting minimum environmental standards: effluent conveyance, wastewater treatment and water production and conveyance. Effluent conveyance would include a pump station and conveyance of the 25 MGD of primary effluent from the IWTP to a new wastewater plant to be constructed at the Rio Alamar area. Secondary, tertiary and advanced water treatment facilities for the primary effluent will be constructed and operated at the Rio Alamar site.

### **ESTIMATED COST:**

Between \$15,000,000 and \$79,000,000

### **CURRENT STATUS:**

Proponents for the Bajagua project requested their project be considered as an alternative in the Supplemental Environmental Impact Statement for the IWTP. A BECC Step I pre-proposal application has been submitted. Discussions with U.S. and Mexican authorities at various levels are underway to determine feasibility.



## ***City of Brawley***

# **Wastewater Treatment Facility Project**

### **AGENCY JURISDICTION:**

- UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
- STATE WATER RESOURCES CONTROL BOARD
- REGIONAL WATER QUALITY CONTROL BOARD

### **FOR INFORMATION CONTACT:**

**Mr. Jerry Santillan**  
CITY MANAGER  
400 Main Street  
Brawley, CA 92227

Phone: (760) 344-9111  
Fax: (760) 344-0907  
E-mail: None available

### **ENVIRONMENTAL NEED/PROBLEM**

The City of Brawley is under an order from the Regional Water Quality Control Board (Board) to meet compliance with current State and Federal standards. The current plant is able to handle up to 3.9 MGD (million gallons per day) and at times operates at 92% capacity. Particularly, during storms, the flow to the plant can be overwhelming to the liquid processes. The Board has determined that the City needs to start design for upgrade, expansion and or build a new plant.

### **SUGGESTED PROJECT**

Expansion of the current wastewater treatment facility would alleviate the City's water quality problem. The new project consists of a primary treatment plant and a secondary lagoon system with liquids and solids treatment processes. The expansion of the new plant will increase its total capacity to 6.0 MGD, with a hydraulic capacity to perform adequately at combined storm and wastewater flows of up to 15.3 MGD. The City is under a Board order to make the proposed improvements by the year 2000. Once completed, the facility will be able to meet requirements from the Regional Water Quality Control Board, USEPA and County Health Department.

### **ESTIMATED COST:**

\$7,000,000

### **CURRENT STATUS:**

Design is at 90% completion. The City has submitted a BECC Step I application form. It is anticipated that the project will seek BECC certification by end of 1998. Very recently, the City was awarded a \$200,000 Technical Assistance grant from the BECC to help fulfill Step II application requirements and an IDP grant from the NADBank to conduct a System Rate Study. This project marks the City's second water infrastructure project under the BECC-NADBank process.





## City of Calexico

# Water Treatment Plant Expansion Project, Phases I & II

### AGENCY JURISDICTION:

- CALIFORNIA DEPARTMENT OF HEALTH SERVICES
- UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

### FOR INFORMATION CONTACT:

**Mr. Mariano Martinez**  
*Public Works Director*

DEPARTMENT OF PUBLIC WORKS  
608 Heber Avenue  
Calexico, CA 92231

Phone: (760) 768-2180  
Fax: (760) 357-5864  
E-mail: calexicopwd@yahoo.com

### ENVIRONMENTAL NEED/PROBLEM

The environmental need that exists in the City of Calexico is water. Per the California Department of Health Services office of Drinking Water, the present City of Calexico water treatment plant is deficient in numerous areas. In addition the City is experiencing growth which exacerbates the deficiencies. The following summarizes the historical background of the City's water treatment plant and the listed deficiencies.

### BACKGROUND

The City of Calexico obtains its drinking water from a surface water supply, the Colorado River. The City comes under the water quality standards established by the United States Environmental Protection Agency and the State of California Department of Health Services Office of Drinking Water. Current water quality requirements have been established in the 1986 Safe Drinking Water Act Amendment and the Surface water Treatment Rule.

The City's water treatment plant, called Plant A, was initially constructed in 1949 with primary facilities consisting of a clarifier, filters and disinfection system. In 1965 the treatment plant was expanded, and Plant B consisting of another clarifier and a "Greenleaf" filter, was added. In 1990, the Plant A clarifier was refurbished and the filter was converted to a conventional type multi-media filter.

### DEFICIENCIES

Many of the plant treatment facilities are almost 50 years old and are approaching the end of their useful life. The California Department of Health Services Office of Drinking Water have identified numerous deficiencies in the treatment plant that compromise the ability to provide properly treated and disinfected drinking water that meet the current applicable regulations on a continuous basis. Major deficiencies include:

The Plant A clarifier is 300% hydraulically overloaded and the Plant B clarifier is 200% hydraulically overloaded.

The Plant B "Greenleaf" filters in its present configuration is not an acceptable filtering system that meets the Health Department's present requirements.

The existing chemical feed systems are inadequate and must be improved. Aqua-ammonia facilities must be added to stop the formation of disinfected by products.

Auxiliary equipment such as turbidimeters and filter to waste capabilities must be incorporated into the plant.

### SUGGESTED PROJECT

For the water treatment plant, improvements will require new structures but improvements to existing structures will also be done in order to minimize the size if the new structures and construction costs. Proposed facilities are as follows:

**PROPOSED FACILITIES**

In order to comply with the current regulations and correct the above deficiencies, the major proposed facilities will incorporate the following:

New clarifier – This will reduce the hydraulic loading of the existing clarifiers to acceptable levels.

New multimedia filters with state-of-the art monitoring and operational schemes. These filters will replace the existing obsolete and unacceptable “Greenleaf” filters.

Improved chemical feed systems with the addition of an aqua-ammonia storage and feed system.

Necessary electrical system improvements, piping and valving modifications and auxiliary equipment to make the new facilities completely functional and operational.

The mechanical equipment of the Plant “B” clarifier will be replaced in order to bring the Plant “B” clarifier into conformance with current standards.

The existing “Greenleaf” filter structure will be converted into a backwash recovery tank. This will reduce the amount of water discharged to waste at the treatment plant. Thus, more fresh water will be available for other uses.

An additional storage tank, pipeline, and booster pump station will be constructed on the eastern section of Calexico that will provide more storage and better water pressure in this section of the City.

**ESTIMATED COST:**

<b>Item</b>	<b>Estimated Cost</b>
Treatment Plant Engineering Design	\$ 240,000.00
Distribution and Storage Engineering Design	\$ 190,000.00
Treatment Plant Construction (Phase I)	\$ 6,400,000.00
Distribution Main (Phase II)	\$ 1,400,000.00
Storage and Booster Pump (Phase III)	\$ 2,800,000.00
Administration, Other Engineering, Testing & Inspection Fees	\$ 300,000.00
<b>Total project Funding</b>	<b>\$11,330,000.00</b>

**CURRENT STATUS:**

- a) For the water treatment plant, plans and specifications have been prepared.
- b) The distribution main, storage reservoir and booster pump station, the City is awaiting funding to begin design of the distribution main, storage reservoir and booster pump station.

A BECC Step II application is completed, NADBank is currently conducting a financial analysis. The City was recently awarded a Technical Assistance grant to help in fulfilling Step II requirements and an IDP grant from the NADBank. It is anticipated this project will seek BECC certification in June 1998.

## *Descanso Community Water District*

# **Descanso Facilities Replacement Project**

### AGENCY JURISDICTION:

- SAN DIEGO DEPARTMENT  
OF HEALTH SERVICES

### FOR INFORMATION CONTACT:

**Mr. Larry Linder**  
*General Manager*

DESCANSO COMMUNITY  
WATER DISTRICT  
P.O. Box 610  
Descanso, CA 91916

Phone: (619) 445-2330  
Fax: (619) 445-7496  
E-mail: None available

### ENVIRONMENTAL NEED/PROBLEM

The community of Descanso is in need of making improvements to its current water delivery system. A 1996 sanitary survey conducted by the local health department indicated the District's wells were high in iron and manganese levels, often exceeding secondary MCL. The system which is constructed of various materials, amongst these, galvanized, asbestos and glued plastic pipes, which do not meet current pipe standards for a public utility. During the past year, the system experienced 38 leaks. Additionally, the District is under a compliance order for inadequate storage.

### SUGGESTED PROJECT

The community of Descanso is planning to replace an obsolete main line distribution pipe, increase storage capacity, rehabilitate failing wells, reduce water usage and increase water conservation.

### ESTIMATED COST:

\$4,040,000.00

### CURRENT STATUS:

The project is currently in the preliminary design phase with no estimated construction date set.

A BECC Step I application has been submitted. Step II application is currently being completed. Very recently, Descanso Community Water District was awarded a \$100,000 Technical Assistance grant from the BECC to help in fulfilling Step II application requirements.

It is anticipated this project will seek BECC certification by end of 1998.



## ***Agrari Environmental Corporation***

# **San Diego Tire Pyrolysis And Recycling Plant**

### **AGENCY JURISDICTION:**

- INTEGRATED WASTE MANAGEMENT BOARD
- AIR POLLUTION CONTROL DISTRICT

### **FOR INFORMATION CONTACT:**

**Mr. Ramiro Rivas**  
*Executive Director*

AGRARI ENVIRONMENTAL CORPORATION  
517 Emerson Ave.  
Calxico, CA 92231

Phone: (760) 357-2529  
Fax: None available  
E-mail: None available

### **ENVIRONMENTAL NEED/PROBLEM**

The county of San Diego generates approximately 2.7 million waste tires annually, while many of these tires are recycled or disposed through established mechanisms, many are illegally dumped. Waste tires that are illegally dumped represent a disease vector associated with habitat for mosquitoes, skunks, rats and other disease bearing insects and animals. If ignited, abandoned tires create enormous amounts of air pollutants including sulfur dioxide and partially consumed hydrocarbons are released to be absorbed into the ground and will contaminate any available ground water with aromatic hydrocarbons such as benzene and toluene. Tires are not biodegradable; they will lay wherever deposited to be a source threat to the environment until picked up and recycled.

### **SUGGESTED PROJECT**

The Argai Environmental Corporation plans to construct and operate a tire recycling plant at a site located at Otay Mesa.

This plant will have an annual capacity for approximately 3 million waste tire equivalents. \* Tires, including truck and bus tires will be shredded at the plant site. The shreds will be heated to produce carbon black and a high grade of clear oil. These two products can be recycled into new rubber products. The steel in the tires will be recovered and sold to scrap steel buyers for recycling into new steel products. ( \*a waste tire equivalent (WTE) weighs 18.7 pounds). The plant will have an employment base of approximately 30 employees. The technical process will meet all the environment codes and regulations of the local, city, county, state and federal authorities. Usage of water is minimum at approximately 8 GPM. No plant process waste water is produced since closed, recycled washing and cooling systems are utilized.

### **ESTIMATED COST:**

\$11,000,000

### **CURRENT STATUS:**

Design for the project is complete. Construction will begin as soon as funding is secured. It is anticipated that construction of the entire plant could be accomplished in approximately six months. Project will be seeking BECC certification by end of 1998.



**CALIFORNIA PRODUCES APPROXIMATELY  
30 MILLION WASTE TIRES ANNUALLY.**

## ***Heber Public Utility District***

# **Water And Wastewater Treatment Facilities Project**

### **AGENCY JURISDICTION:**

- CALIFORNIA DEPARTMENT OF HEALTH SERVICES
- REGIONAL WATER QUALITY CONTROL BOARD
- STATE WATER RESOURCES CONTROL BOARD

### **FOR INFORMATION CONTACT:**

#### **Mr. Steve Hogan**

HEBER PUBLIC UTILITY DISTRICT  
1085 Ingram Ave.  
P.O. Box H  
Heber, CA 92249

Phone: (760) 353-0323  
Fax: (760) 353-9951  
E-mail: SCH1253@aol.com

### **ENVIRONMENTAL NEED/PROBLEM**

The community of Heber currently has a failing water and wastewater treatment facilities. Existing problems include: exceeding capacity at the wastewater treatment plant and inability to provide adequate water supply to the residents in the community due to outdated water filtration system. Other problems include: the need to replace an aging infrastructure for the collection of wastewater and the distribution of water, replacement of a wastewater lift station, establish an ongoing main replacement program, replace major gate valves, construct additional main pipelines for system redundancy.

### **SUGGESTED PROJECT**

Upgrade and/or replacement both failing systems. This would include: 1) a new wastewater plant with additional sludge drying bed, headworks, and lining emergency flow equalization basins with impermeable materials and pumping equipment; 2) a new water plant, new headworks, additional sedimentation pond pipes, valves and filters, lining of two sedimentation ponds with concrete to prevent erosion and collapse, a decanting station for backwashing filters, and a new 1.0 million gallon water storage tank. 3) Water and sewer main replacement program for aging infrastructure 4) replacement of a sewer lift station to prevent overflows and contamination of occupied dwellings, streets and alleys. 5) Replace a 10 year old Water/Sewer Billing System (including route scheduling and maintenance) 6) Replace/repair broken and corroded gate valves.

### **ESTIMATED COST:**

\$4,500,000

### **CURRENT STATUS:**

Preliminary discussion and planning is underway. BECC Step I application will be submitted and potential funding sources identified.



## ***Olivenhain Municipal Water District***

# **Olivenhain Water Storage Project**

### **AGENCY JURISDICTION:**

- STATE WATER RESOURCES CONTROL BOARD
- REGIONAL WATER QUALITY CONTROL BOARD

### **FOR INFORMATION CONTACT:**

**Mr. David C. McCollom**  
*General Manager*

OLIVENHAIN MUNICIPAL  
WATER DISTRICT  
1966 Olivenhain Road  
Encinitas, CA 92024

Phone: (760) 753-6466 xtn. 114  
Fax: (760) 753-5640  
E-mail: omwdgm@mailhost2.  
csusm.edu

### **ENVIRONMENTAL NEED/PROBLEM**

This project will provide substantial community benefits. The potable water treatment plant will prevent Giardia and cryptocysts from entering the water system as well as optimizing microorganism removal and turbidity reduction from surface water sources. Thus reducing the public's exposure to organisms resistant to disinfection. The water produced will exceed all federal, State and local quality requirements. The project will improve public health, preserve natural environment, maintain an improve the quality of life for region's

### **SUGGESTED PROJECT**

The project consists of an open, raw water storage reservoir with capacity between 6,000 acre feet and 24,000 acre feet, a roller compacted concrete dam, an 82 million gallons per day treatment plant, a raw water pipeline connecting the reservoir to the San Diego County Water Authority Second San Diego Aqueduct, a flow control station, a treated water line, a pump station, the installation of new above ground electrical power poles to provide electric service to the pump station, four staging areas for construction activities and the construction of an access road from Via Ambiente to the reservoir and treatment plant site.

### **ESTIMATED COST:**

\$ 65,000,000

### **CURRENT STATUS:**

BECC Step I pre-proposal application submitted. Discussions currently underway with the BECC and NADBank.



**OTAY LAKES**

## ***Palo Verde Water District*** **Sewer/Wastewater Treatment System Project**

### **AGENCY JURISDICTION:**

- UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
- STATE WATER RESOURCES CONTROL BOARD
- REGIONAL WATER QUALITY CONTROL BOARD

### **FOR INFORMATION CONTACT:**

**Mr. Dave Crockett**  
*President, Board of Directors*

PALO VERDE WATER DISTRICT  
P.O. Box 185  
Palo Verde, CA 92266

Phone: (760) 854-3519  
Fax: (760) 854-3053  
E-mail: None available

### **ENVIRONMENTAL NEED/PROBLEM**

The community of Palo Verde currently has no sewer system . Many of septic systems are sub-standard or in ill-repair causing septic runoff to leach into the town's groundwater and into the lagoon flowing through town. The groundwater has been deemed unhealthy for domestic use. There is currently a moratorium on building in the area due to inadequate treatment of wastewater.

### **SUGGESTED PROJECT**

The community of Palo Verde proposes to remedy the problem by constructing a wastewater treatment system. Since no system currently exists, this will require the acquisition of land and all new construction.

### **ESTIMATED COST:**

\$4,040,000

### **CURRENT STATUS:**

The project is currently in the preliminary design phase with no estimated construction date set.



**OXIDATION LAGOONS NEAR THE SALTON SEA**



## *County of Imperial*

# New River Environment Restoration Project

### AGENCY JURISDICTION:

- UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
- STATE WATER RESOURCES CONTROL BOARD
- REGIONAL WATER QUALITY CONTROL BOARD

### FOR INFORMATION CONTACT:

**Richard H. Inman,**  
*County Administrative Officer*

COUNTY OF IMPERIAL  
940 West Main Street, Suite 208  
El Centro, CA 92243

Phone: (760) 339-4290  
Fax: (760) 352-7876  
E-mail: richinman@aol.com

### ENVIRONMENTAL NEED/PROBLEM

The New River transverses Imperial County from the Mexican Border to the Salton Sea. The river flows north through Mexicali Mexico where it receives effluent and agricultural drainage, which continues north to the Salton Sea. The New River has been seriously impaired and polluted for many years. The problem is that the New River threatens human health.

### SUGGESTED PROJECT

Conduct an analysis and feasibility study of use of alternatives and methodologies for restoring the New River. The end product will be a recommended restoration project and funding estimate.

### ESTIMATED COST:

\$2.1 Million, local share \$1.1 Million.

### CURRENT STATUS:

BECC Step I application submitted.  
The project is currently waiting funding.





## ***Salton Community Services District***

# **Desert Shores -Replacement of Sewage Treatment Plant Facility And Sewer Mains**

### **AGENCY JURISDICTION:**

- REGIONAL WATER QUALITY CONTROL BOARD
- STATE WATER RESOURCES CONTROL BOARD

### **FOR INFORMATION CONTACT:**

**Mr. Henry P. Snyder**  
*General Manager*

SALTON COMMUNITY SERVICES DISTRICT  
P.O. Box 5268  
Salton City, CA 92275

Phone: (760) 394-4446  
Fax : (760) 394-4242  
E-mail: None available

### **ENVIRONMENTAL NEED/PROBLEM**

A. Sea water intrusion from the Salton Sea has caused deterioration of sewer mains in the area. Also, sea water intrusion into the sewer collection system has been pumped into the oxidation/evaporation lagoons, said sea water has caused the total dissolved solids to increase the accepted guideline of 1200-1400 PPM to approximately 13,000 PPM.

Infiltration from the lagoons has caused ground water contamination which is in violation of Water Quality guidelines causing a cease and desist order by the local Water Quality Control Board. District will be required posthaste to correct above problems.

B. Sea water intrusion into lagoons caused by sea water being in collection system and pumped lagoons over the years. Sea water has caused total dissolved solids to increase from accepted levels of approximately 1,000 PPM to 13,000 PPM. Infiltration of salts into the ground water basin has affected ground water quality which is not acceptable to the local quality guidelines. This has caused a cease and desist order by the quality Control Board which required the District to correct the problem.

### **SUGGESTED PROJECT**

A. Sea water intrusion into existing sewer mains causing mains to disintegrate and need to be replaced.

#### **1. CAPRI LANE - Desert Shores and ACAPULCO LANE - Desert Shores**

- a. Replacement of approximately 2000' of 8" sewer main in each residential area.
- b. Project will remove problem of sea water intrusion and eliminate operation and maintenance costs.

### **ESTIMATED COST:**

\$100,000.00 for each residential area; Total: \$200,000.00

### **CURRENT STATUS:**

Projects not in design, preliminary engineering study completed.  
Construction estimated to begin approximately September 1998

### **SUGGESTED PROJECT**

B. Desert Shores Treatment Plant - Relining lagoons and/or replacement of lagoons with primary/secondary treatment plant

Proposed project is to either install linings in the seven oxidation/evaporation ponds to prevent the infiltration into the ground water and/or build a new primary secondary treatment plant (package plants possibly)

### **ESTIMATED COST:**

\$200,000 to \$400,000

### **CURRENT STATUS:**

Engineering study has been completed but no design at this time. Estimated construction will be September 1999 to July 2000.

## *City of Westmorland*

# Water Treatment Plant Upgrade

#### AGENCY JURISDICTION:

- CALIFORNIA DEPARTMENT  
OF HEALTH SERVICES

#### FOR INFORMATION CONTACT:

**Mr. Robert McKay**  
*City Manager*

P.O. Box 699  
Westmorland, CA 92281

Phone: (760) 344-3411  
Fax: (760) 344-5307  
E-mail: westmorl@brawleyonline.com

#### ENVIRONMENTAL NEED/PROBLEM

The City of Westmorland is under an order from the Department of Health Services (DHS) to meet compliance with current State standards.

#### SUGGESTED PROJECT

Upgrade of current water treatment plant will be enable the City to meet requirements from the Department of Health Services.

#### ESTIMATED COST:

\$3,700,000

#### CURRENT STATUS:

Preliminary design and engineering and planning are complete. The City is in the process of determining the best funding sources for this project as well as the analyzing the possibility of regionalization with other nearby communities.



PROYECTOS DEL ESTADO  
DE BAJA CALIFORNIA





ADOLFO GONZALEZ CALVILLO

## MENSAJE DEL DIRECTOR

La participación del Gobierno del Estado de Baja California, a través de la definición de la política ambiental dentro del Plan Estatal de Desarrollo 1996 - 2001, está comprometida con el desarrollo social y económico de la región, para elevar la calidad de vida de la población, eficientizando los procesos productivos sin afectar el medio ambiente y sus riquezas, transitando así hacia la sustentabilidad, en plena concordancia con el Programa de Medio Ambiente 1995 - 2000, el cual establece que todo proyecto a largo plazo debe ser interpretado a la luz de su significado ambiental y de las condiciones de su viabilidad biofísica o sustentabilidad.

En este contexto, concebimos una región con características privilegiadas en la cual el desarrollo sustentable se pretende alcanzar considerando como elemento prioritario para mejorar la calidad de vida, el contar con un ambiente sano. Pretendemos lograr un desarrollo como región, el cual nos lleve a ser una zona de ensamble y terminado a calidad mundial, así como de producción y procesamiento de alimentos hacia el mercado mundial.

El desarrollo que pretendemos requiere, necesariamente de contar con una infraestructura adecuada, entre ellas, la infraestructura ambiental. Para lo anterior es menester realizar propuestas viables que se traduzcan en acciones concretas tendientes a la protección del medio ambiente y la salud pública.

El presente reporte, es una recopilación de proyectos de infraestructura ambiental, que los diferentes sectores de la sociedad, proponen para apoyar las actividades relacionadas con el manejo y distribución de agua potable, con el tratamiento de agua residual y el manejo de residuo sólidos. Asimismo, esperamos que su utilización facilite la toma de decisiones, así como la coordinación intergubernamental y el apoyo de la comunidad a las obras que esta demanda.

Deseo expresar mi mas sincero agradecimiento los Señores: Peter M. Rooney, Secretario de la Agencia de Protección al Medio Ambiente del Estado de California y Jim M. Stubchaer, Vice-Presidente del Consejo Estatal del Control del Agua de California por su apoyo y cooperación y a todas las organizaciones, grupos y personas que han participado con sus proyectos en este primer trabajo de recopilación, exhortándolos a seguir manifestando su interés por el bienestar de nuestra frontera común.

ATENTAMENTE.

Adolfo González Calvillo  
Director General  
Dirección General de Ecología  
Del Estado de Baja California

**Comisión Estatal de Servicios Públicos de Mexicali**  
**Programa De Saneamiento De La Ciudad De Mexicali**  
*Consta de 41 obras a realizarse en la ciudad de Mexicali en un termino de 3 años (1998-2000).*

**JURISDICCIÓN:**

• SUBDIRECCIÓN DE OBRAS DE CALIDAD  
COORDINACIÓN PROGRAMA  
CESPM-COCEF

**NOMBRE DEL TITULAR  
O RESPONSABLE:**

**Ing. Luis M. Venegas Rodriguez,**  
*Coordinador*

Comision Estatal de Servicios  
Publicos de Mexicali (CESPM)  
Av. Gustavo Garmendia y Río Sinaloa  
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CORREO ELECTRONICO: NINGUNO

**NECESIDAD/PROBLEMA AMBIENTAL:**

En el caso del sistema Mexicali I (Uno) actualmente las necesidades de la ciudad son en cuanto al tratamiento de las aguas residuales, ya que por no contar la infraestructura existente con la capacidad suficiente de tratamiento esto ocasionalmente produce problemas con la calidad de las aguas descargadas al Río Nuevo.

Existen asentamientos ubicados en la zona poniente y suroeste de la ciudad que no cuentan con el servicio de alcantarillado sanitario, lo cual los obliga a tener fosas septicas con la consecuente contaminacion de los mantos freaticos asi como la proliferacion de enfermedades por aire y por agua producidas por la exposicion a estos residuos.

En el caso del sistema Mexicali II (Dos) las redes de drenaje actualmente descargan directamente sin recibir tratamiento alguno al dren Río Nuevo lo cual ocasiona graves problemas de contaminacion a todo lo largo del mismo, encontrandose asentamientos humanos en las margenes.

**DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARA EL PROYECTO PLANTEADO:**

La ciudad de Mexicali se encuentra dividida actualmente en dos sistemas, el Mexicali I y el Mexicali II.

El Sistema Mexicali I cuenta una planta de tratamiento de aguas residuales ubicadas en la Col. Zaragoza las cuales tienen una capacidad de diseño de tratamiento de 980 L.P.S., y se esta proyectando ampliar su capacidad a 1,300 L.P.S. asi como tambien se construiran redes de alcantarillado para los asentamientos ubicados al poniente de la ciudad, los cuales cuentan actualmente con fosas septicas teniendo algunos hasta mas de 30 años en estas condiciones.

Las obras consistiran en la construccion de atarjeas, colectores y subcolectores, planta de bombeo y emisor, considerando el punto final de descarga las lagunas de tratamiento de la Colonia Zaragoza, para lo cual dentro del programa se tiene contemplada la construccion de una ampliacion de 750 L.P.S. exclusivamente para dar servicio a estas colonias en desarrollo.

Se llevara a cabo la reposicion y encamisado de colectores existentes los cuales debido a su antigüedad se estan colapsando o estan a punto de caerse, lo que ocasiona se tengan que hacer desvios de las aguas negras al sistema pluvial y posteriormente descargar al Río Nuevo, asi como tambien la rehabilitacion de 4 (Cuatro) carcamos de bombeo mejorando la eficiencia de los mismos.

Se realizara la instalacion de un sistema de telemetria en los equipos de carcamos, plantas de bombeo y lagunas de tratamiento.

El Sistema Mexicali II actualmente su red de colectores se encuentra descargando al dren Río Nuevo, existiendo solamente la planta de tratamiento de Gonzalez Ortega la cual tiene un capicidad de diseño de 60 L.P.S. y esta trabajando al triple de su capacidad de tratamiento, descargando finalmente al dren Río Nuevo.

Como parte de las obras esta la construccion de colectores y subcolectores en las areas que no cuentan con el servicio, las cuales descargaran en la planta de bombeo No. 4 la cual se construira en la confluencia de la carretera Mexicali-San Felipe y el dren Río Nuevo.

A partir de este punto se construira el emisor de 48" de diametro de tuberia de acero esto en su segunda etapa ya que la primera etapa esta en proceso de construccion, con un recorrido de 9.5 KM. Hacia el sur las aguas residuales seran conducidas a la planta de tratamiento del sistema de Mexicali II, la cual se construira en un terreno de 285 hectareas, siendo su proceso a base de lagunas de estabilizacion y filtros

rociadores, teniendo capacidad de tratamiento de 1680 L.P.S., inicialmente se construira la primera etapa de 840 L.P.S.

Las aguas seran tratadas de tal forma que cumplan con la normatividad nacional asi como con los parametros establecidos en los acuerdos internacionales, la calidad del agua residual tratada hara posible su uso para cuestiones agricolas, y el agua restante sera descargada a drenes que finalmente llegan al dren Río Nuevo, estos trabajos lograran que se mejore la calidad de las aguas del Río Nuevo.

**COSTO ESTIMADO DEL PROYECTO PLANTEADO:**

El costo estimado de las obras del proyecto es de \$48,991,108.00 (Cuarenta y ocho millones novecientos noventa y un mil ciento ocho dolares), las obras se realizaran en un periodo de 3 (Tres) años (1998-2000).

De acuerdo con los tratados internacionales el 55% del costo de las obras sera aportado por los Estados Unidos y el restante 45 % por Mexico, en este caso el gobierno federal, estatal y el organismo.

**ESTATUS DEL PROYECTO:**

El proyecto se certifico por parte de la COCEF, en diciembre de 1997.

Actualmente se esperan fondos provenientes del BANDAN y de USEPA para el proyecto.



**CONSULTAS PUBLICAS PARA EL PROYECTO DE MEXICALI.**





## **Secretaría de Fomento Agropecuario**

# **Aprovechamiento De Aguas Residuales**

### **JURISDICCIÓN:**

• ESTATAL

### **NOMBRE DEL TITULAR O RESPONSABLE:**

**Ing. Genaro Lopez Bojorquez**  
Secretaría De Fomento Agropecuario

### **PERSONA A CONTACTAR (PUESTO):**

**Ing. Salvador Navarro Pulido**  
Director De Agricultura  
Del Estado  
Pasaje Coyoacan Y Calafia  
No. 675  
Centro Civico Y Comercial  
Mexicali, B.C.

Tel: (65) 55-49-30 AL 36  
Fax: (65) 55-49-42  
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snavarro@baja.gob.mx

**Proyecto (A)** Aprovechamiento De Aguas Residuales Tratadas Para Fines Agricolas  
En La Cd. De Tijuana, B.C.

**Proyecto (B)** Aprovechamiento De Aguas Residuales Tratadas Para Fines Agricolas  
En La Cd. De San Felipe, B.C.

**Proyecto (C)** Aprovechamiento De Aguas Residuales Tratadas Para Fines Agricolas  
En La Cd. De Ensenada, B.C.

**Proyecto (D)** Aprovechamiento De Aguas Residuales Tratadas Para Fines Agricolas  
En La Cd. De Mexicali, B.C.

**Proyecto (E)** Aprovechamiento De Aguas Residuales Tratadas Para Fines Agricolas  
En La Cd. De Tecate, B.C.

### **DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARÁ EL PROYECTO PLANTEADO:**

#### **Proyecto (A)**

Las descargas de la planta de tratamiento de aguas de la ciudad de Tijuana es de 750 L.P.S. Actualmente, la utilización de estas aguas se destina a fines ornamentales en un complejo turístico denominado Real del Mar y el resto del volumen se descarga al mar; sin embargo, es posible su utilización para fines agrícolas ya que se cuenta con una zona denominada granjas la esperanza donde es posible la siembra de aproximadamente 450 has. Asimismo, existe un huerto de 40 has. de olivo de temporal que puede ser incorporado al riego con estas aguas y elevar sensiblemente su productividad.

#### **Costo Estimado Del Proyecto Planteado:**

Se cuenta con un proyecto de obra de toma elaborado por la Comisión de servicios de agua del estado cuyo monto asciende a un millón quinientos mil pesos, siendo necesario complementar con el requerimiento de inversión en el concepto agrícola.

### **DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARÁ EL PROYECTO PLANTEADO:**

#### **Proyecto (B)**

En la ciudad de San Felipe, la planta de tratamiento de aguas residuales descarga al mar un volumen de 75 L.P.S., utilizándose solo para el riego de un pequeño vivero de plantas de ornato que consume menos de un L.P.S. Existe la posibilidad de establecer una explotación de por lo menos 75 has. para uso agrícola, pudiendo establecerse huertos de frutales y el establecimiento de viveros de plantas para ornato, lo que contribuiría a aportar frutas al mercado local y la posibilidad de reforestación urbana, reduciendo al mínimo la descarga de agua residual al mar de cortes.

#### **Costo Estimado Del Proyecto Planteado:**

No se ha determinado el costo del proyecto.



#### DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARÁ EL PROYECTO PLANTEADO:

##### **Proyecto (C)**

Actualmente en la Cd. de Ensenada, se encuentra en las últimas etapas de construcción la planta de tratamiento de agua denominada “casa pinta” que generará en su primera etapa 500 L.P.S. de aguas residuales hasta llegar a los 700 L.P.S. que es su capacidad de diseño, una vez en operación, permitirá eliminar el uso de la planta de tratamiento El Gallo que se encuentra en la parte central de la ciudad e impedirá las descargas a la bahía. Existe una zona en el valle de Maneadero denominada el Salitral donde es susceptible el establecimiento de cultivos irrigados con aguas residuales tratadas en una superficie de 200 has. para la producción de semilla, cultivos industriales y forrajeros.

##### **Costo Estimado Del Proyecto Planteado:**

No se ha determinado el costo del proyecto.

#### DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARÁ EL PROYECTO PLANTEADO:

##### **Proyecto (D)**

La Cd. de Mexicali descarga anualmente un volumen de 38 millones de metros cúbicos de aguas residuales tratadas en lagunas de oxidación. Por condiciones naturales de pendiente, estas descargas tienen como destino final el Mar Salton en los Estados Unidos, lo que ha originado protestas por parte de ese país argumentando la contaminación causada por la baja calidad del agua.

Un posible aprovechamiento de este tipo de agua es su utilización para fines agrícolas, para la siembra de productos agrícolas de consumo indirecto como forrajes y granos. Con esta actividad se pretende obtener ventajas en dos aspectos:

- Reducir el volumen de agua residual que se envía a los Estados Unidos.
- Aprovechar las aguas como un recurso hidráulico adicional al convencionalmente existente, que permita la posibilidad de regar cultivos cuando exista escasez de agua normal y en su caso, lograr la siembra de doble cultivo, permitiendo un uso más intensivo de los recursos.

En una primera etapa, el proyecto contempla el riego de 1,200 has. con la infraestructura actualmente existente, pretendiéndose extender a una superficie de 2,700 has. si se realizan las obras de infraestructura necesarias.

##### **Costo Estimado Del Proyecto Planteado:**

Por parte de la Comisión Nacional del Agua, se está elaborando el presupuesto de obra para la ampliación de la superficie irrigada con aguas residuales tratadas.

**DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARÁ EL PROYECTO PLANTEADO:****Proyecto (E)**

La Cd. de Tecate descarga diariamente un gasto promedio de 110 L.P.S. de aguas residuales tratadas en la planta de tratamiento. El destino final de estas aguas es los Estados Unidos, siendo posible de ser utilizadas en la agricultura en la zona de Valle Redondo en una superficie aproximada de 80 has. para el cultivo de olivo, considerando la escasez de agua clara que proporciona el acuífero de la zona.

**Costo Estimado Del Proyecto Planteado:**

Se cuenta con un proyecto de obra de toma elaborado por la Comisión de Servicios de Agua del Estado cuyo monto asciende a un millón seiscientos mil pesos.

**ESTATUS DEL PROYECTO:****Proyecto (A)**

Aunque ya se tiene el monto de la inversión para la obra de toma de agua, es necesario contar con elementos que determinen la factibilidad organizativa de los solicitantes, debido a que en su mayoría los habitantes de la zona de Granjas la Esperanza no radican en ese lugar. Quien muestra mayor interés en el uso de estas aguas es el productor de olivo con una superficie de 40 has. plantadas.

**Proyecto (B)**

Se está elaborando un perfil de proyecto para el establecimiento de un huerto fenológico de diferentes especies de frutales y árboles de ornato con el propósito de determinar la adaptabilidad y desarrollo productivo de estas especies que permita en el mediano plazo, la posibilidad de establecer huertos comerciales utilizando aguas residuales tratadas, con la participación de productores locales.

**Proyecto (C)**

Aun no se ha determinado el costo de la obra de conducción al área agrícola, siendo necesario conocer la calidad del agua resultante para conocer la viabilidad para su uso en la agricultura y proceder a formular el proyecto agrícola.

**Proyecto (D)**

En etapa de presupuestación, aunque cabe mencionar que ya se ha utilizado el agua residual en la agricultura: en el ciclo primavera-verano 96-97 se sembraron 300 has. de cultivos como sorgo y zacate bermuda y en el ciclo otoño-invierno 96-97 se regaron 450 has. de trigo y avena con este tipo de agua.

**Proyecto (E)**

Aunque ya se cuenta con el monto de la inversión para la obra de toma de agua, actualmente se está determinando la calidad del agua con que se cuenta para conocer su viabilidad para el uso agrícola. Asimismo, se va a analizar el suelo para conocer su posible contaminación por sales y otros elementos nocivos, con el propósito de contar con elementos para formular el proyecto agrícola.

## Universidad Autónoma de Baja California (UABC)

# Planta de Tratamiento Domésticas para Aguas Residuales

### JURISDICCIÓN:

• MUNICIPAL

### NOMBRE DE LA DEPENDENCIA U ORGANIZACIÓN:

Universidad Autónoma de Baja  
California (UABC) de Inmobiliaria  
Estatad de Ensenada

### NOMBRE DEL TITULAR O RESPONSABLE:

**Ing. César Obregón M-Sáenz,**  
Ocean. Bernardo Primitivo Flores  
Báez.

### PERSONA A CONTACTAR (PUESTO):

**Ing. César Obregón.**  
Facultad de Ingeniería  
Km. 103, Carretera Tijuana-Ensenada  
C.P. 22860  
Ensenada, B.C., Mexico

Tel: (61) 74-40-01  
Fax: Ninguno  
Correo Electronico: Ninguno

### DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARA EL PROYECTO PLANTEADO:

Reuso de aguas residuales domesticas: dando solucion al problema de irregular abastecimiento de agua y carencia de sistema de drenaje o de coleccion de aguas residuales.

A traves de este sistema se aprovecha el recurso agua, escaso en nuestro estado y cuyo sistema de abastecimiento presenta irregularidades y carencias en diferentes localidades alejadas de los centros urbanos. Asi mismo, viene a cubrir la necesidad de sistemas de coleccion de aguas residuales, en sitios en donde no se cuenta con dicha infraestructura.

### COSTO ESTIMADO DEL PROYECTO PLANTEADO:

\$40,000.00 (cuarenta mil pesos 00/100 m.n.)

### ESTATUS DEL PROYECTO:

Se concluyeron la fase de diseño de la planta prototipo y fase de prueba experimental. Se encuentra en la fase de implementacion de una planta piloto en una casa habitacion a fin de realizar los ajustes y pruebas que arrojen como resultado la planta de tratamiento domestica de aguas residuales prototipo definitivo.



LAGUNA DESERTICA

## Municipio de Playas de Rosarito

### Varios Proyectos

#### JURISDICCION:

• MUNICIPIO DE PLAYAS DE ROSARITO

#### NOMBRE DE LA DEPENDENCIA

#### U ORGANIZACION:

Asociacion de Ecologia y Saneamiento Ambiental de Playas de Rosarito, B.C. A.C.  
Institucion de Beneficencia Privada de Utilidad Publica

#### NOMBRE DEL TITULAR

#### O RESPONSABLE:

**Ing. Javier Brown Guajardo,**  
*Presidente del Consejo de Administracion*

y/o

**C.P. Elia Campillo Osnaya**

*Vicepresidente Ejecutivo de la, Asociacion Civil y Secretaria General del Consejo de Administracion del Patronato.*

#### PERSONA A CONTACTAR (PUESTO):

Ambas

#### DOMICILIO FISCAL:

Calle Federico Fruebel #3  
Col. Magisterial C.P. 22711  
Municipio de Playas de Rosarito.

#### DOMICILIO DE OFICINAS:

Boulevard Benito Juarez 911  
Centro Comercial  
Oceana Plaza local 57 arriba del DIF Municipal. Col. Centro

#### DOMICILIO DE

#### CORRESPONDENCIA COMUN:

Calle Rene Ortiz Campo  
y esquina Mar Adriatico,  
Zona Centro,  
Municipio de Playas de Rosarito

Teléfono De Oficina:

(661) 3-02-53

Teléfono Comun:

(661) 2-03-33 y 2-19-07

Fax: Solicitando tono de fax  
en ambas lineas

Correo Electronico:

Ninguno

**Proyecto (1)** “Parque Ecoturistico Para Rosarito”

**Proyecto (2)** “Plan De Manejo De Medanos De Primo Tapia”

**Proyecto (3)** “Reuso De Aguas Residuales De Las Lagunas De Oxidacion De La CESPT, Que Cruzan El Arroyo Huahuatay”

**Proyecto (4)** “Planta Tratadora Y Su Terminacion Total De Las Actuales Lagunas De Oxidacion De Zona Centro De Playas De Rosarito”

**Proyecto (5)** “Planta Tratadora De Puerto Nuevo”

**Proyecto (6)** “Plan De Manejo Para Formar Cooperativas Y Mejorar La Imagen Ecoturistica De Popotla”

**Proyecto (7)** “Estudio Y Promocion Para La Zona Hotelera Que No Cuente Con Planta Tratadora En El Municipio De Playas De Rosarito”

**Proyecto (8)** “Reciclaje De Llantas Usadas”

**Proyecto (9)** “Procesamiento De Residuos Biologicos Infecciosos”

**Proyecto (10)** “Relleno Sanitario Del Municipio De Playas De Rosarito”

#### DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARÁ EL PROYECTO PLANTEADO:

##### Proyecto (1)

Fomentar la cultura ecoturística y ambiental de la zona, generando áreas verdes y recreativas, así como reutilizar el uso de aguas residuales semitratadas de tipo doméstico, generando fuentes directas e indirectas de empleos, promoviendo el campismo, la protección de la flora y fauna del Cañon Rosarito, así como protegiendo el bosque bipario, generando áreas deportivas y de esparcimiento familiar, así como viveros, huertos familiares, avario, teatros al aire libre, lago artificial. Caminatas a caballo por la zona y museo regional, así como serpentario de las serpientes de la región. Talleres ambientales de reciclaje y ecología.

##### Costo Estimado Del Proyecto Planteado:

Se divide en tres etapas de \$150,000.00 pesos cada uno, siendo un total de \$450,000.00 mas un 50% de participacion en general de la comunidad.

#### DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARÁ EL PROYECTO PLANTEADO:

##### Proyecto (2)

Evitar el deterioro ambiental de dicho ecosistema, mejorando la calidad y dando otro atractivo ecoturístico a la zona, evitando los equipos de motor y controlando su uso. Así como proliferando la fauna que ha tenido impacto ambiental.

##### Costo Estimado Del Proyecto Planteado:

\$250,000.00 pesos.

#### DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARÁ EL PROYECTO PLANTEADO:

##### Proyecto (3)

Disminuir el impacto ambiental y proteger la salud de los ciudadanos rosaritenses, disminuyendo los escurrimientos, malos olores e imagen urbana que dan a la afluencia del turista en la zona.

##### Costo Estimado Del Proyecto Planteado:

\$5, 000, 000. 00 pesos con participacion del gobierno federal, estatal y municipal integrando a conagua, CESPT y formacion de CESPR.

**DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARA EL PROYECTO PLANTEADO:****Proyecto (4)**

Se tratan en forma aeróbica y primaria las aguas residuales de la ciudad, provocando derramamiento directo sobre el arroyo, formando focos de infección y malos olores, necesaria el agua para su reuso en áreas verdes en la escénica, evitando impactar la zona terrestre y marítima.

**Costo Estimado Del Proyecto Planteado:**

\$2,500,000.00 pesos que tendrá que invertir el gobierno del estado y el municipio a corto plazo. A través de la dependencia de la CESPT.

**DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARA EL PROYECTO PLANTEADO:****Proyecto (5)**

Se trata de disminuir el impacto ambiental de las aguas crudas sobre el mar de la zona restaurantera a nivel internacional evitando extinguir las especies que se consumen y que tienen gran mercado como es el erizo, la langosta y el abulón. Así como mejorar la calidad de vida de la zona y de los propios residentes de Puerto Nuevo.

**Costo Estimado Del Proyecto Planteado:**

\$3,000,000.00 pesos presupuesto que tendrá que invertir el gobierno del estado y el municipio a corto plazo.

**DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARA EL PROYECTO PLANTEADO:****Proyecto (6)**

La imagen de la zona restaurantera de Popotla es deprimente y antihigiénica, tiene un afluente turístico alto (hablamos de 5,000 visitantes en el verano), se consume el pescado recién extraído del mar, tienen todas fosas sépticas, algunas con fallas de mantenimiento grave en estado primitivo. La imagen de los locales es rudimentaria y de poco atractivo. Los alimentos son ricos pero se necesita mayor higiene.

**Costo Estimado Del Proyecto Planteado:**

\$1,500.00 pesos con participación del 50% de capital de los mismos propietarios, así como del gobierno del estado y del municipio.

**DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARA EL PROYECTO PLANTEADO:****Proyecto (7)**

Existe un 80% de hoteles y desarrollos turísticos que cuentan con plantas de tratamiento obsoletas y otros tiran crudas sus aguas al mar. Es triste ver que muchos desarrolladores y empresarios no han aprovechado el descuento del 22% que por decreto el Sr. Gobernador otorgó a aquellos que tengan la calidad de las plantas tratadoras y reusen sus aguas en zonas de riego.

Para ello será necesario hacer un plan de promoción y descuento, así como estímulos fiscales que den mayor motivación para los que construyan sus plantas tratadoras.

**Costo Estimado Del Proyecto Planteado:**

\$300,000.00 pesos que deberá invertirse en la Dirección de Ecología del Estado y la Secretaría de Turismo en el Municipio de Playas de Rosarito.

**DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARA EL PROYECTO PLANTEADO:****Proyecto (8)**

Actualmente tenemos el problema de las llantas usadas, debemos fomentar una inversión mixta para que se reciclen formando cubos para construcción de muelles, o para zonas recreativas metiendo y comprimiendo a la llanta para evitar quemazones como las de 1995, que grupos pseudo ambientalistas lucraron criminalmente y en contubernio con autoridades ejidales y de ecología, lograron impactar San Antonio de los Buenos acopiando casi seis millones de llantas. Proponiendo que los que dañaron promuevan la solución para limpiar su nombre o se actúe conforme a derecho ambiental.

**Costo Estimado Del Proyecto Planteado:**

\$3,000,000.00 pesos con inversión del 50% de particulares y lo demás distribuido entre el gobierno del estado y municipio.

**DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARA EL PROYECTO PLANTEADO:****Proyecto (9)**

No existe en el área del Municipio de Playas de Rosarito, una industria que trate los residuos biológicos infecciosos, que podría generar fuentes de trabajo así como disminuir los problemas de basureros clandestinos y de que dichos residuos se revuelvan en los rellenos sanitarios, que pueden ocasionar problemas de salud pública a los que trabajan directa e indirectamente con ellos.

**Costo Estimado Del Proyecto Planteado:**

\$2,500,000.00 pesos con inversión de un 70% de particulares y participación del gobierno del estado y del municipio. Integrando a hospitales y clínicas particulares incentivando con estímulos fiscales.

**DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARA EL PROYECTO PLANTEADO:****Proyecto (10)**

Se tiene muy costoso actualmente los servicios de recolección de desechos sólidos, así mismo por la falta de un relleno sanitario los particulares tiran en forma clandestina los desechos sólidos por doquier, generando fuentes contaminantes de altas proporciones. Actualmente se tiene un propietario que cuenta con un terreno que puede cubrir dichas necesidades, pero se necesita hacer el estudio de impacto ambiental por lo que incrementan los costos para su manejo y adecuación.

**Costo Estimado Del Proyecto Planteado:**

\$3,000,000.00 pesos con un 60% de inversión del particular y participación del gobierno del estado y el municipio.

**ESTATUS DEL PROYECTO:****Proyecto (1)**

Actualmente se ha forestado la primera seccion y se esta bardeando, asi como se esta haciendo el deslinde topografico que ya se tenia por parte del Ayuntamiento de Tijuana, se esta ratificando por parte del Municipio de Playas de Rosarito. Asi como se esta haciendo la traslacion de dominio en forma juridica, para que las autoridades actuales refrenden el Comandato con la Asociacion. El terreno se llama "El Aguajito" y tiene una superficie de 18 has.

**Proyecto (2)**

Solo se tiene el anteproyecto, se necesita hacer una cooperativa entre los ejidatarios dueños del terreno.

**Proyecto (3)**

En etapa de presentacion y aprobacion de presupuesto. Ya se obtuvieron la donacion de tubos donados por PEMEX, por gestiones internas de esta asociacion civil en la administracion pasada, que actualmente el nuevo ayuntamiento tuvo usufructo. Dando factibilidad al proyecto.

**Proyecto (4)**

Esta aun en aprobacion y presupuesto para 1998. Pero falta corroborar.

**Proyecto (5)**

Va avanzando aunque se ha dicho que pronto se va a empezar la obra, no sabemos si ya los terrenos en donde quedaran no tendran problemas, ya que ese era el obstaculo asi como hacer el inventario de los comerciantes que ya dieron su cuota hace 14 años.

**Proyecto (6)**

No se han formado cooperativas , actualmente se cuenta con una asociacion civil de la zona pero se observa desorden y egocentrismo. Asi como un aire belico contra las filmaciones Century Fox por su colindancia con sus predios. Sera necesario que intervenga la secretaria de turismo para hacer un convenio con ambos y de esta manera mejorar la calidad de vida tanto de los comerciantes como de los pescadores y visitantes que asisten a la zona.

**Proyecto (7)****Proyecto (8)**

Aun no se ha planteado.

**Proyecto (9)**

Aun no se ha planteado por falta de inversionista.

**Proyecto (10)**

Se esta en concenso con obras publicas municipales y planeacion urbana del estado.

\*observacion: algunos son proyectos de dependencias estatales, federales y municipales.

**Instituto Tecnológico de Tijuana**

## **Tratamiento De Aguas Residuales Por El Metodo De Tierras Humedas (Wetland Sumergido)**

**JURISDICCION:**

• TIJUANA B.C., MEXICO.

**NOMBRE DE LA DEPENDENCIA  
U ORGANIZACION:**

Instituto Tecnologico de Tijuana.

**NOMBRE DEL TITULAR O  
RESPONSABLE:**

**Ing. Ramon Quiñones Saucedo**  
(Responsable)  
y  
**Dr. David A. Lara Ochoa**  
(Colaborador)

**PERSONA A CONTACTAR (PUESTO):**

**Ing. Ramon Quiñones Saucedo,**  
*Coordinador de la Especializacion  
en Ingenieria*

Av. Industrial S/N Unidad de Centro  
de Graduados Unidad de Otay

Tel: (66) 23-37-72  
Fax: (66) 23-40-43

Correo Electronico:  
itt@mail.tij.cetys.mx

**DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARA EL PROYECTO PLANTEADO:**  
Desarrollar un metodo para tratar las aguas residuales de origen domestico e industrial por un metodo eficiente y de bajo costo de construccion, operacion y mantenimiento.

**COSTO ESTIMADO DEL PROYECTO PLANTEADO:**  
\$148,751.72 dolares.

**ESTATUS DEL PROYECTO:**  
Dicho proyecto en colaboracion con la Comision Estatal de Servicios Publicos de Tijuana se encuentra en las instalaciones de la planta de tratamiento de aguas residuales de Punta Bandera Rosarito, B.C. en fase de operacion, y evaluacion, hasta Junio de 1998.





## **Municipio de Ensenada, Dirección de Desarrollo Urbano Y Ecología**

# **Manejo Y Confinamiento De Desechos Sólidos**

### **JURISDICCIÓN:**

- MUNICIPIO DE ENESENADA, B.C.  
CIUDAD DE ESENADA Y 23  
DELEGACIONES

### **NOMBRE DE LA DEPENDENCIA U ORGANIZACIÓN:**

XV Ayuntamiento de Ensenada  
Dirección de Desarrollo Urbano y  
Ecología

### **NOMBRE DEL TITULAR O RESPONSABLE:**

**Arq. Benjamín Peña Guerrero**

Ave. Floresta y Calle Tercera, 1323

Tel: (61) 76-37-11 y 77-24-66

Fax: (61) 77-24-50

Correo Electronico: Ninguno

### **DESCRIPCIÓN DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARÁ EL PROYECTO PLANTEADO:**

La problemática a resolver será el manejo inadecuado y deficiente de los desechos sólidos generados actualmente por las 23 delegaciones que conforman al municipio de Ensenada. Debido a que en la actualidad, no se cuenta con un programa integral para el manejo de desechos sólidos domésticos y agroindustriales.

Otro de los aspectos que se abordará, es la educación ambiental para promover una cultura hacia el reciclaje y la reutilización de los desechos. Asimismo, la alternativa hacia la creación de pequeñas empresas que se dediquen al reciclaje. Provocando con ello un impacto positivo en el medio socioeconómico y ambiental del municipio.

### **COSTO ESTIMADO DEL PROYECTO PLANTEADO:**

El proyecto contempla las siguientes actividades:

Ubicación de sitios para relleno sanitario y estación de transferencia en las 23 delegaciones	460,000.00
Adecuación y accesos a las áreas ubicadas	345,000.00
Contenedores (Roll Off) 48	768,000.00
Camiones para transportar (Roll Off) 23	552,000.00
Camiones para transportar basura 26	1'456,000.00
Educación ambiental (Talleres)	230,000.00
<b>TOTAL</b>	<b>3'811,000.00</b>

### **ESTATUS DEL PROYECTO:**

Propuesta.

## Municipio de Ensenada, Dirección de Obras Y Servicios Municipales

### Varios Proyectos

#### JURISDICCIÓN:

- MUNICIPIO DE ENSENADA, B.C.
- DIRECCION DE OBRAS Y SERVICIOS MUNICIPALES H.XV AYUNTAMIENTO DE ENSENADA, B.C.

#### NOMBRE DEL TITULAR O RESPONSABLE:

**Arq. Rodolfo García Cuevas,**  
*Director*

#### PERSONA A CONTACTAR (PUESTO):

**Ing. Jose Luis Garibay Ruiz**  
*Subdirector de Obras  
Publicas Municipales*

Ave. Reforma No. 80 Y Blvd.  
Ramirez Mendez  
Ensenada, B.C.  
Palacio Municipal

Tel: (61) 76-17-76  
Fax: (61) 76-17-97  
Correo Electronico: Ninguno

- Proyecto (A)** Suministro De Agua Potable: Acueducto El Hongo-Valle De Guadalupe  
**Proyecto (B)** Re-Equipamiento Acueducto Maneadero-Ensenada  
**Proyecto (C)** Sistemas De Recoleccion: Sub-Colector Emiliano Zapata Reforzamiento Interceptor 16 de Septiembre Prolongacion Colector Matamoros  
**Proyecto (D)** Colector Valle Dorado-Pescadores, Colector Aeropuerto-Pescadores, Colector Valle Dorado-Langunita  
**Proyecto (E)** Tratamiento: Planta De Tratamiento Casa Pinta-El Naranjo Primera Etapa  
**Proyecto (F)** Sistema De Re-Usa Aguas Tratadas Casa Pinta-El Naranjo  
**Proyecto (G)** Manejo Integral De Residuos Solidos Municipales

#### DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARA EL PROYECTO PLANTEADO:

##### Proyecto (A)

Segun los pronosticos de la comision estatal de servicios publicos de Ensenada, en 1997 iniciara el deficit de suministro de agua para la ciudad, por lo que es necesario promover el suministro de la unica fuente segura de la region: el acueducto Río Colorado.

##### Costo Estimado Del Proyecto Planteado:

Costo Aproximado: \$380'000,000.

#### DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARA EL PROYECTO PLANTEADO:

##### Proyecto (B)

Actualmente el acueducto conduce solamente 230 litros por segundo de agua, siendo su capacidad de 320 litros por segundo. Este proyecto debera considerar el re-uso de aguas tratadas para inyeccion a el subsuelo en la zona agricola de Maneadero.

##### Costo Estimado Del Proyecto Planteado:

Costo Aproximado: \$10'000,000.

#### DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARA EL PROYECTO PLANTEADO:

##### Proyecto (C)

La ciudad crecio hacia el noreste, en un sector no considerado en el original proyecto integral de agua potable y alcantarillado, lo que ha provocado derrame de aguas negras en el Arroyo de el Aguajito con el consecuente problema social y sanitario.

##### Costo Estimado Del Proyecto Planteado:

Costo Aproximado: \$15'000,000.

#### DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARA EL PROYECTO PLANTEADO:

##### Proyecto (D)

La zona conurbada de el Ex-Ejido Chapultepec ha sufrido un crecimiento explosivo los ultimos diez años a raiz de su desincorporacion de la zona ejidal.

La poblacion demanda agua potable con la consiguiente descarga de aguas residuales a fosas septicas y letrinas, contaminando el subsuelo y los posibles mantos acuíferos. Estas obras deberan complementarse con la construccion de la planta de tratamiento Casa Pinta-El Naranjo.

**Costo Estimado Del Proyecto Planteado:**

Costo Aproximado: \$20'000,000.

**DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARÁ EL PROYECTO PLANTEADO:****Proyecto (E)**

El crecimiento natural de la ciudad hacia el sur envuelto la ubicación original de la planta de tratamiento El Gallo, conurbando además la zona de el Ex-Ejido Chapultepec.

Tal crecimiento demográfico hace necesario incrementar la capacidad de tratamiento previendo los espacios de infraestructura para los crecimientos esperados en el sector.

**Costo Estimado Del Proyecto Planteado:**

Costo Aproximado: \$60'000,000.

**DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARÁ EL PROYECTO PLANTEADO:****Proyecto (F)**

Una vez resuelto el tratamiento de las aguas residuales es necesario recordar que el estado de Baja California en lo general y la ciudad de Ensenada en lo particular adolecen de escases de recursos naturales de agua, por lo que es necesario reutilizar las aguas tratadas de una manera sustentable, tanto en reinyección a el subsuelo, como en riego agrícola, riego de áreas verdes, parques y suministro de zona industrial.

**Costo Estimado Del Proyecto Planteado:**

Costo Aproximado: \$60'000,000.

**DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARÁ EL PROYECTO PLANTEADO:****Proyecto (G)**

La utilización de el relleno sanitario a su capacidad de diseño y la apertura de nuevas zonas para el mismo fin son la base para manejar de una manera sustentable la basura generada por los habitantes de la ciudad.

El desecho sólido de las plantas de tratamiento es factible de utilizarse en la elaboración de suelos orgánicos que nos permitan regenerar áreas verdes en los rellenos sanitarios una vez logrado su fin; así como obtener áreas de cultivo donde los suelos han perdido su capacidad útil.

La instalación de plantas para el reciclado de desechos sólidos es importante, toda vez que los volúmenes de basura son cada vez más grandes.

**Costo Estimado Del Proyecto Planteado:****Estatus Del Proyecto:**

- Proyecto (A)
- Proyecto (B)
- Proyecto (C)
- Proyecto (D)
- Proyecto (E)
- Proyecto (F)
- Proyecto (G)

INFORMACION NO DISPONIBLE

## ***Centro de Investigación Científica y De Educación Superior de Ensenada***

# **Tratamiento Y Re-Usó De Agua Residual**

### **(Bioremediación De Aguas Residuales Marinas)**

#### **JURISDICCIÓN:**

• ENSENADA, BAJA CALIFORNIA

#### **NOMBRE DE LA DEPENDENCIA U ORGANIZACIÓN:**

Centro de Investigación Científica y  
de Educación Superior de Ensenada  
(CICESE)

#### **NOMBRE DEL TITULAR O RESPONSABLE:**

**Dr. Francisco Javier Mendieta  
Jiménez,**  
*Director General*

#### **PERSONA A CONTACTAR (PUESTO):**

**Dr. J. Jesús Paniagua Michel,**  
*Investigador de Biotecnología Marina y  
Director de la División de Oceanología*

Km. 107 Carretera Tijuana, Ensenada  
(Apdo. Postal 2732)  
Ensenada, B.C. 22830

Tel: (61) 75-05-40  
Fax: (61) 75-05-74

Correo Electrónico:  
jpaniagu@cicese.mx

**DESCRIPCIÓN DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARÁ EL PROYECTO PLANTEADO:**  
Aplicar tecnologías alternativas no convencionales para el reuso de aguas residuales marinas mediante consorcios microbianos.

**COSTO ESTIMADO DEL PROYECTO PLANTEADO:**  
\$300,000.00

**ESTATUS DEL PROYECTO:**  
Etapa inicial.



## Comisión Nacional Del Agua

### Varios Proyectos

#### JURISDICCIÓN:

• GERENCIA REGIONAL DE LA  
PENINSULA DE B.C.

#### NOMBRE DE LA DEPENDENCIA U ORGANIZACIÓN:

Comisión Nacional del Agua

#### NOMBRE DEL TITULAR O RESPONSABLE:

Dr. Francisco Oyarzabal Tamargo

#### PERSONA A CONTACTAR (PUESTO):

Ing. Miguel Angel Vásquez  
Berumen.

Av. Reforma y Calle "L", S/N, Col.  
Nueva Mexicali, B.C.

Tel: (65) 52-33-37 y 54-74-63

Fax: (65) 54-25-58

Correo Electronico:Ninguno

- Proyecto (A)** Adecuación De Proyecto Ejecutivo De La Planta De Tratamiento De Aguas Residuales Mexicali II
- Proyecto (B)** Proyecto Ejecutivo Para La Rehabilitación Y Ampliación De La Planta De Tratamiento De Aguas Residuales Zaragoza, De Mexicali, B.C.
- Proyecto (C)** Planeación Integral Y Proyectos Ejecutivos De Alcantarillado Sanitario En 27 Colonias De La Cd. De Mexicali, B.C.
- Proyecto (D)** Emisor A Presión Mexicali II, Mexicali, B.C.
- Proyecto (E)** Proyecto Ejecutivo Para La Estación De Bombeo De Aguas Residuales PB No. 4 En La Ciudad De Mexicali, B.C.
- Proyecto (F)** Planta De Tratamiento De Aguas Residuales "El Naranjo" Con Una Capacidad De 750 L.P.S., En La Primera Etapa 500 L.P.S., En Ensenada, B.C.
- Proyecto (G)** Construcción de colectores, emisores y Planta de Bombeo, Ensenada, B.C.
- Proyecto (H)** Obras Paralelas De La Ciudad De Tijuana, B.C.

#### DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARA EL PROYECTO PLANTEADO:

##### Proyecto (A)

El sistema de Mexicali II genera 470 L.P.S. de agua residual de los cuales 370 reciben un tratamiento deficiente en las Lagunas de Estabilización de González Ortega cuya capacidad de 80 L.P.S. fué rebasada. Los otros 100 L.P.S. se descargan sin tratamiento alguno al Río Nuevo a través del Dren Mexicali. En virtud de que la Laguna de Estabilización González Ortega está localizada en zona densamente poblada, se requiere de la construcción de la Planta de Tratamiento Mexicali II para tratar toda el agua que se genera en la zona, y en crecimiento en los próximos 10 años.

##### Costo Estimado Del Proyecto Planteado:

Se ha estimado un costo de 70 millones de pesos.

#### DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARA EL PROYECTO PLANTEADO:

##### Proyecto (B)

La capacidad de diseño de 980 L.P.S. que tiene actualmente ha sido rebasada y, además su infraestructura y funcionamiento hidráulico presenta deficiencias que es urgente corregir, por lo que en base a lo anterior, La CNA elaboró el proyecto ejecutivo correspondiente, incrementando su capacidad de tratamiento a 1,300 L.P.S. la cual es suficiente para las necesidades de la Zona Mexicali I.

##### Costo Estimado Del Proyecto Planteado:

Se ha estimado un costo de 12.8 millones de pesos.

#### DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARA EL PROYECTO PLANTEADO:

##### Proyecto (C)

Actualmente la zona que abarca estas 27 colonias, localizada al poniente de la zona denominada Mexicali I, no cuentan con infraestructura para desalojar las aguas residuales generadas. De acuerdo a la planeación integral de la zona se requiere incrementar la capacidad de tratamiento de la planta de la Colonia Zaragoza en un metro cúbico por segundo o plantear la construcción de otra planta de tratamiento, que a la fecha aún no se tiene el proyecto ejecutivo correspondiente.

##### Costo Estimado Del Proyecto Planteado:

Se ha estimado un costo de \$23 millones de pesos.

**DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARA EL PROYECTO PLANTEADO:****Proyecto (D)**

Esta obra es para conducir las aguas residuales que genera la zona oriente de la Ciudad de Mexicali a la Planta de Tratamiento Mexicali II.

**Costo Estimado Del Proyecto Planteado:**

Se ha estimado un costo de 22.6 millones de pesos.

**DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARA EL PROYECTO PLANTEADO:****Proyecto (E)**

Esta obra es parte del Sistema de drenaje sanitario Mexicali II, para enviar las aguas residuales a través del emisor Mexicali II a la Planta de Tratamiento del mismo nombre.

**Costo Estimado Del Proyecto Planteado:**

El costo estimado es de 20 millones de pesos.

**DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARA EL PROYECTO PLANTEADO:****Proyecto (F)**

La ciudad de Ensenada genera 450 L.P.S. de aguas residuales y únicamente cuenta con la Planta de Tratamiento El Sauzal con una capacidad de 60 L.P.S. y la de El Gallo por 250 L.P.S., misma que recibe del orden de 400 L.P.S., por lo que únicamente se procesan 250 y los 150 restantes se descargan sin tratar a la Bahía, provocando su contaminación.

**Costo Estimado Del Proyecto Planteado:**

Se ha estimado un costo de 50 millones de pesos.

**DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARA EL PROYECTO PLANTEADO:****Proyecto (G)**

Esta obra es para conducir las aguas residuales generadas por la Ciudad que se concentran en la Planta de Tratamiento El Gallo, a la nueva Planta de Tratamiento El Naranja (con capacidad de 750 L.P.S. con una primera etapa de 500 L.P.S.).

**Costo Estimado Del Proyecto Planteado:**

Se ha estimado un costo de 24 millones de pesos.

**DESCRIPCION DE LA PROBLEMÁTICA ESPECÍFICA QUE APOYARA EL PROYECTO PLANTEADO:****Proyecto (H)**

Descripción de la problemática específica que apoya el proyecto planteado:

El emisor terrestre y submarino de la Planta Binacional no se ha concluido, por lo que se requiere conducir temporalmente las aguas tratadas de la Planta Binacional, actualmente en operación, mediante la construcción de una planta de Bombeo y una línea de conducción paralela a la existente denominada "Obras Paralelas" hasta descargar al mar, en las inmediaciones de San Antonio de los Buenos. Una vez que entre en operación el emisor terrestre y submarino, las obras paralelas servirán de respaldo al sistema existente que presenta deficiencias de diseño del proyecto.

**Costo Estimado Del Proyecto Planteado:**

Se ha estimado un costo de 128 millones de pesos.

**ESTATUS DEL PROYECTO:****Proyecto (A)**

El Proyecto ejecutivo en seis tomos fue entregado al organismo operador de Mexicali (CESPM).

**Proyecto (B)**

El Proyecto ejecutivo correspondiente fue concursado por SAHOPE y a la fecha está en proceso de construcción.

**Proyecto (C)**

El Proyecto ejecutivo correspondiente ya fue entregado al organismo operador de Mexicali (CESPM) y al Gobierno del Estado (SAHOPE).

**Proyecto (D)**

La obra se encuentra en proceso de construcción por la CNA con recursos 100% federales y se tiene un avance del 15%.

**Proyecto (E)**

El proyecto ejecutivo fue entregado al organismo operador de Mexicali (CESPM), mismo que a la fecha está preparando la carpeta de concurso para realizar su licitación y llevar a cabo la construcción de la obra.

**Proyecto (F)**

Se entregó el proyecto ejecutivo elaborado por esta CNA al gobierno del estado, y este mismo mes se publicará la convocatoria para iniciar su construcción este mismo año con recursos 100% federales, estimándose ejercer del orden de 5 millones de pesos, y el resto por el Gobierno del Estado.

**Proyecto (G)**

Los colectores y una parte de los emisores fueron contratados y se encuentran en proceso de construcción por el gobierno del estado, con aportación federal y estatal y la PB Ciprés y el emisor “El Ciprés-El Naranjo” fueron convocados, se encuentran en proceso de construcción y se realizarán con aportación federal y estatal.

**Proyecto (H)**

El proyecto conceptual fue certificado por la COCEF y el proyecto ejecutivo tiene un 95% de avance.

## GRANT PROGRAMS



**GRANT PROGRAM A**  
BECC Technical Assistance

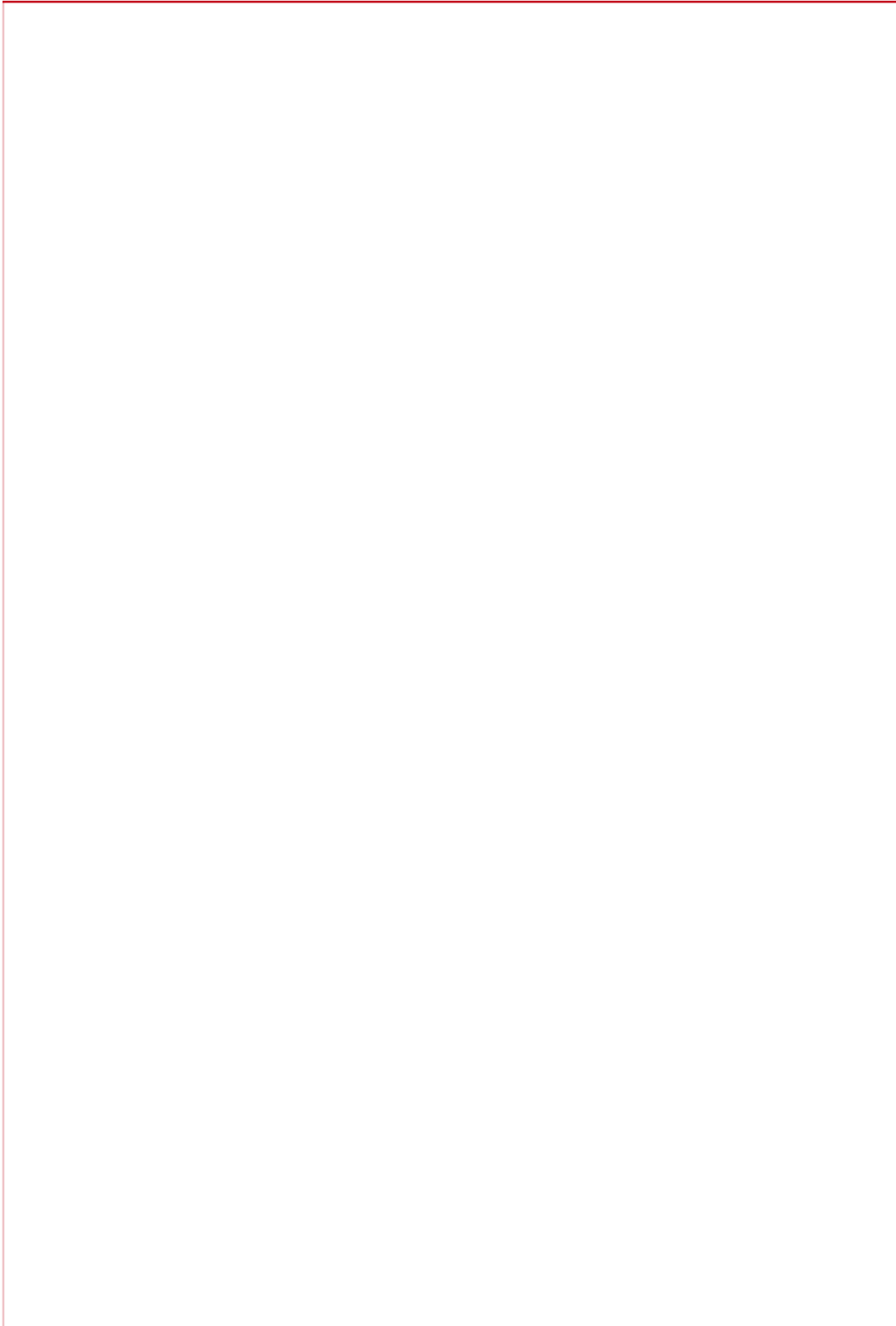
**GRANT PROGRAM B**  
NADB (IDP)

**GRANT PROGRAM C**  
NADB (BEIF)

**GRANT PROGRAM D**  
GTN (USAID)

**GRANT PROGRAM E**  
USDA





## TECHNICAL ASSISTANCE FOR BORDER COMMUNITIES



## INTRODUCTION

The Technical Assistance Program of the Border Environment Cooperation Commission (BECC) assists communities in planning and designing water supply, wastewater treatment, solid waste and other improvement projects along the U.S.-Mexico border. Funding for the water-related projects comes from the U.S. Environmental Protection Agency (EPA). The current funding level for water-related projects is U.S. \$10 million. Solid waste and related projects are managed under a separate portion of the program and may receive assistance through the BECC budget or other funding sources. This manual defines the program and eligibility requirements, and provides guidance on the process for applying for technical assistance in addition to the responsibilities of communities who receive assistance under the program.



DESERT REGION NEAR THE U.S.-MEXICO BORDER.

### BENEFITS OF TECHNICAL ASSISTANCE

Many border communities do not have the resources and, often, the administrative capability to finance and carry out a project development program. Without the resources to undertake preliminary engineering and design studies that would find solutions to their environmental problems, many communities would not be able to obtain BECC certification. BECC's Technical Assistance Program will fill this void by:

- providing grants to communities for technical assistance;
- providing communities with the assistance necessary to manage infrastructure projects; and
- assisting communities to obtain BECC certification which will allow them to become eligible for funding consideration from the North American Development Bank (NADB) and/or other funding sources.

### BECC CERTIFICATION PROCESS

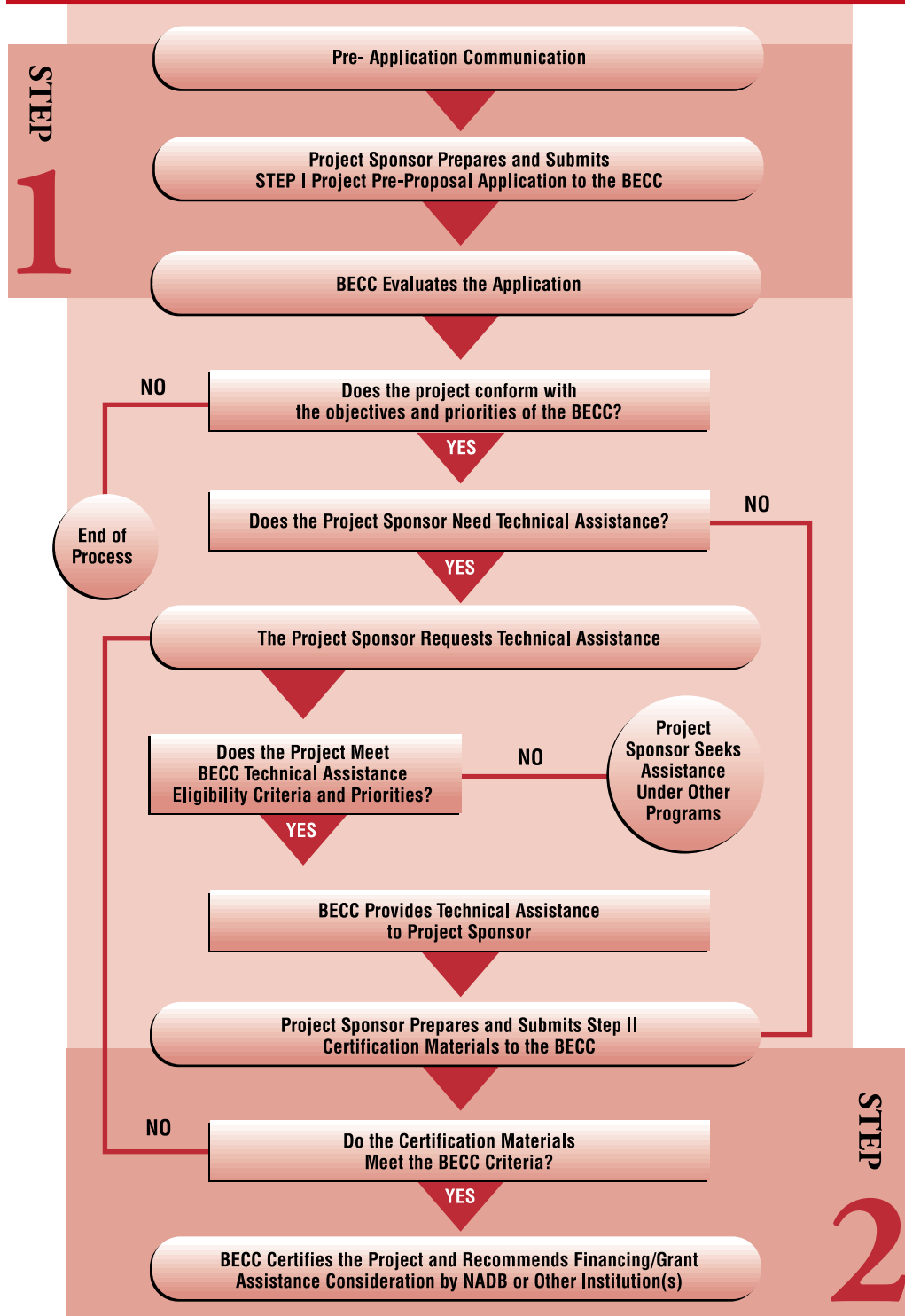
The BECC Technical Assistance Program is designed to help an eligible community achieve BECC certification for an infrastructure project. BECC certification indicates a proposed project is economically and technically viable, environmentally sound, and has support from the public. Certification is required in order to receive consideration for NADB financing and EPA grant funding for final design and construction. Exhibit 1 provides an overview of the BECC certification process, including the role of technical assistance. Interested communities are strongly encouraged to communicate with BECC' staff to discuss proposed projects before completing BECC's Step I and Step II applications, explained below.

**Step I:** The project sponsor completes the Step I Application Form to provide general information about the proposed project. The BECC reviews the Step I application to determine whether the project conforms with the objectives of the BECC and whether the project sponsor will need technical assistance in preparing the detailed information required in Step II.

**Step II:** The project sponsor completes the Step II Application Form by providing detailed information about the proposed project and demonstrating that the project meets BECC's certification criteria. To avoid duplication of effort, the project sponsor may use existing project information to complete the Step II Application Form.

The two-step process for obtaining BECC certification is designed to be as straightforward as possible. However, because the BECC requires detailed information about a project to demonstrate that it meets the BECC certification criteria, some communities may find the certification process challenging. The technical Assistance Program will help project sponsors prepare the necessary information to comply with BECC criteria shown in Exhibit 2.

# EXHIBIT 1: ROLE OF TECHNICAL ASSISTANCE IN THE BECC CERTIFICATION PROCESS



## EXHIBIT 2: SUMMARY OF BECC CERTIFICATION CRITERIA

**1. General.** The project must 1) be water supply, wastewater treatment, municipal solid waste, or other related project; 2) be located within 100 km (62 miles) of the U.S.-Mexico border or found by the BECC to remedy a transboundary health or environmental problem; 3) include a project description and work tasks that are realistic in order to complete the project as planned; and 4) conform with international treaties and agreements.

**2. Human Health and Environment.** The project must 1) address a human health or environmental need and provide a high level of environmental protection; 2) present an environmental assessment to the BECC; and 3) comply with applicable environmental and cultural resource laws and regulations.

**3. Technical Feasibility.** The project must 1) utilize appropriate technology<sup>1</sup>; 2) include an operation and maintenance plan; and 3) comply with applicable design regulations and standards.

**4. Financial Feasibility and Project Management.** The project must 1) have revenues that are sufficient to cover debt amortization; as well as operation and maintenance costs, with an appropriate safety margin; 2) demonstrate that the proposed fee/rate model will produce the cash-flow to support debt service requirements as well as operation and maintenance costs; and 3) demonstrate that it has the capacity to provide service at a reasonable price, implement and operate capital improvement programs independently, and undertake necessary accounting and financial reporting.

**5. Community Participation.** The applicant must 1) submit and implement a BECC-approved Community Participation Plan including a local steering committee, meetings with local organizations, public access to project information, and at least two public meetings; and 2) submit a report to the BECC demonstrating public support for the project.

**6. Sustainable Development.** The project must 1) adhere to the BECC definition and principles of sustainable development<sup>2</sup>; 2) demonstrate existing ability, or have a plan to strengthen the ability of the community for long-term support and maintenance of the project, including measures to build human and institutional capacity, 3) conform with applicable local and regional conservation and development plans; 4) achieve a Reasonable degree of natural resource conservation; and 5) have a positive impact on community development.

<sup>1</sup> Technology which closely matches the level of ability of the local user to operate and maintain the system without creating dependency on high levels of resource inputs from outside the community and without adding significant stress to the environment of the social fabric of the community.

<sup>2</sup> Conservation oriented social and economic development that emphasizes the protection and sustainable use of resources, while addressing both current and future needs, and present and future impacts of human actions as defined in the Border XXI environmental program developed by U.S. and Mexican authorities.

## HOW TECHNICAL ASSISTANCE WORKS

Project applicants interested in obtaining technical assistance should write a brief letter to BECC staff requesting technical assistance and submit a Step I application (see Exhibit 3). The Step I application and letter of request for Technical Assistance must include the following information:

- Basic Information - general information about the project, such as the name of community, the type of project, and description of the project.
- Project Development Assistance Information - a description of the type of technical assistance that a community needs and, if possible, the estimated costs of that assistance. Cost estimates should include supporting documentation of how they were developed.
- Letter of Support by Governing Body - a letter by the community's governing body indicating support for the community to request technical assistance and certification.
- Signature - the application should be signed by the community's highest ranking official or person delegated to request assistance and/or certification on behalf of the community. A copy of the written delegation must accompany the application unless included in the letter of support for the project by the governing body.

The BECC technical person responsible for the project will assist the community in determining whether an intergovernmental review is required. For projects located in Mexico, Mexico's National Water Commission (CNA) or Secretary for Social Development (SEDESOL) may want to review the application before BECC acts on the request. In addition, some state governments, in both the U.S. and Mexico, may require that they have an opportunity to comment on the applicant's request and/or project. BECC staff will assist the project sponsor in obtaining the necessary intergovernmental reviews.

After receiving a request for technical assistance, the BECC will review the information to determine the eligibility of the project for technical assistance (see eligibility requirements below) and the appropriate role of the project sponsor in the solicitation and management of technical consultants (based on the applicant's stated interest and capabilities).

During this process, the BECC will consult with CNA and SEDESOL for Mexican projects and the appropriate U.S. state for U.S. projects. If a project is approved, the BECC will enter into a grant agreement with the project applicant. The grant agreement between the BECC and the project sponsor will specify the role and responsibilities of the project sponsor during the technical assistance process.

The BECC Managers and Board of Directors have the authority to approve grants of up to U.S. \$500,000 for technical assistance. Grants in excess of this amount require approval from the EPA and the BECC Board of Directors. Funding for technical assistance will be limited to one grant per community per year. Additionally, grants for final design engineering assistance will be subject to a determination that the applicant qualifies under the NADB's Border Environment Infrastructure Fund Protocol.

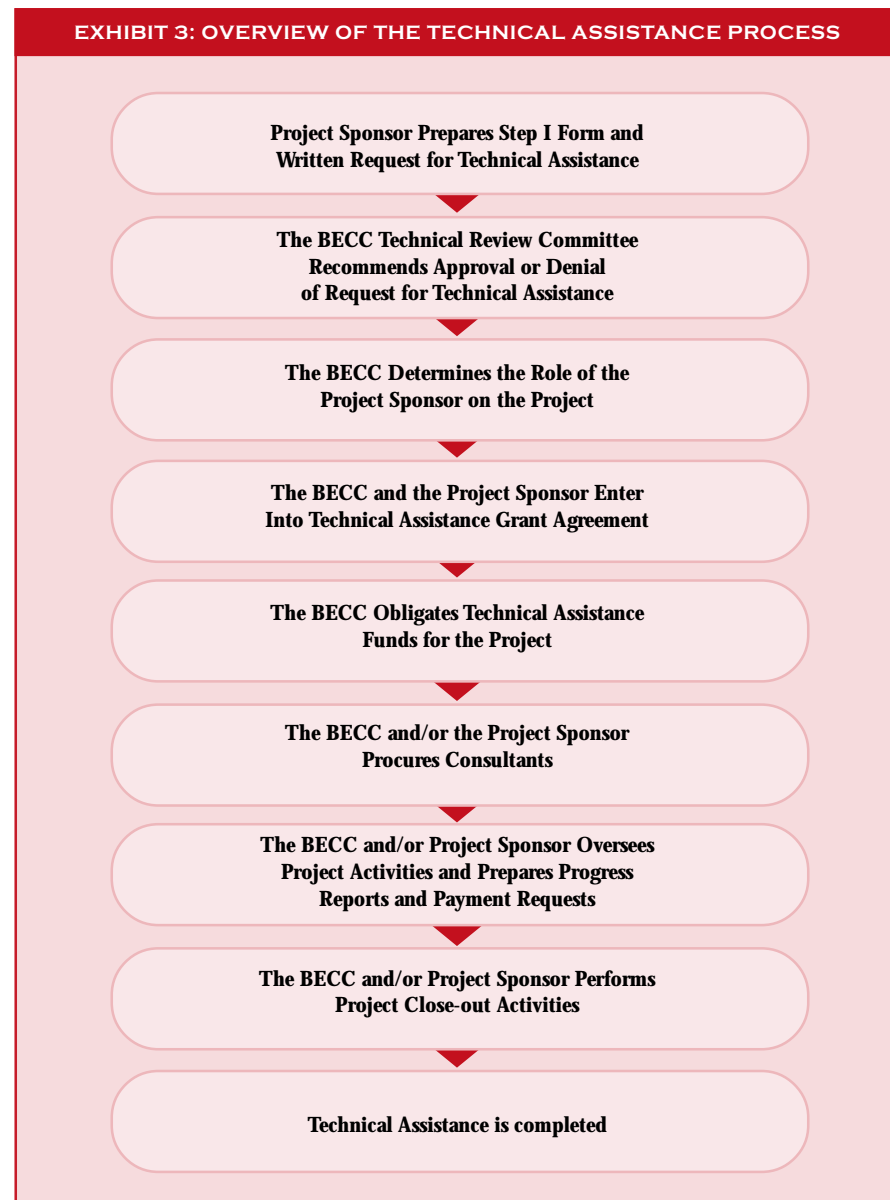
Usually, project applicants will work with a consultant from BECC's pre-qualified list of consultants. In certain cases, an applicant may retain its own consultant, if the consultant was selected in an open, competitive process prior to the establishment of BECC's pre-qualified list of consultants. Such consultants will be evaluated by BECC to ensure they meet BECC technical and experience requirements. Project applicants performing their own procurement will be required to track and report



technical and financial progress and request payment from the BECC to pay consultant's fees. If a community lacks the resources to manage the project, the BECC and/or an external consultant will provide assistance in this area.

The project sponsor also may be responsible for performing close-out activities at the conclusion of obtaining technical assistance, and for maintaining project-related records. Guidance on these activities will be provided by the BECC to project Applicants under separate cover.

### EXHIBIT 3: OVERVIEW OF THE TECHNICAL ASSISTANCE PROCESS



## HOW CAN TECHNICAL ASSISTANCE BE USED?

Technical assistance grants can be applied to a number of activities that will enable a community to achieve BECC certification. Technical assistance is available to support three major categories of activities: (1) concept development; (2) project development; and (3) final design. See Exhibit 4 for examples of these activities.

### 1. CONCEPT DEVELOPMENT

Technical assistance grants can be utilized for activities related to development of project concept. The process is intended to provide an initial indication that a project is in general agreement with BECC guidelines and criteria for project certification. Activities that would help a community identify a potential project include preliminary planning to evaluate alternatives and identification of the best alternative to define the project, preliminary feasibility studies, site evaluations, public outreach, and identification of issues related to the development of BECC's application for certification. Projects that cannot be made consistent with BECC's guidelines and criteria for certification will not be given consideration for further technical assistance.

### 2. PROJECT DEVELOPMENT ASSISTANCE

Technical assistance grants can be utilized for activities related to development of BECC's Step II application. The process is intended to provide assistance to fully develop documentation of project compliance with BECC's Project Certification Criteria. Activities can include project-specific capacity building to address certification criteria, preliminary engineering studies, environmental assessments, technical feasibility studies, financial feasibility and project management studies, preliminary design (maximum 30% design level), development of operation and maintenance plans, and other tasks as related to the development of BECC's Step II application process. Requests for Project Development Assistance will only be considered after the BECC's Step I application has been approved. Only projects which have the potential for conforming to BECC's certification guidelines and criteria will be given consideration for Project Development Assistance.

### 3. FINAL DESIGN ASSISTANCE

Technical assistance grants can be utilized for completion of final plans and specifications necessary for commencement of construction activities. Construction phase services are specifically excluded. Only projects which have been BECC certified and can provide evidence of an initial commitment of funds for construction and meet NADB's Border Environment Infrastructure Fund Protocol will be given consideration for Final Design Assistance.

#### EXHIBIT 4: EXAMPLES OF ACTIVITIES THAT ARE ELIGIBLE FOR TECHNICAL ASSISTANCE.

Communities may receive technical assistance to conduct several different types of activities or program requirements, including developing:

- **Environmental Assessment Studies (EAS)**—These studies identify the positive and negative consequences on the environment as a result of the project (or project options) under consideration, and should identify measures for mitigating any negative impacts.
- **Technical Feasibility Studies**—These studies analyze and summarize the nature and level of technology necessary for ensuring that the project can be implemented. The technological feasibility should demonstrate that the user is capable of operating and maintaining the systems without creating dependency on high levels of resource inputs from outside the community and without adding significant stress to the environment or the social fabric of the community.
- **Economic and Financial Feasibility Studies**—These studies address how the project will be financed and will maintain financial solvency for the duration of the projects lifetime. These studies include general financial information such as: expected cash flows, income statement, and source(s) of financing; budgets, including fixed and variable costs for planning, construction, operations, and maintenance; sensitivity analyses that identify the impacts on the projects by changes in financial variables; break-even analyses that identify the level of revenues at which the project will recover costs; and the economic benefits of the projects, especially in terms of community benefits.
- **Preliminary Engineering Studies**—These studies assess technologies identified in the technical feasibility studies to determine which are viable. These studies typically include project specifications, technical processes, quality control programs, and other data to demonstrate that the engineering principles behind the proposed project are valid and achievable.
- **Evaluations of Social and Sustainability Aspects of Projects**—These evaluations describe how the project sponsors solicited public involvement in all phases of project design and implementation, a description of local environmental services (e.g., water/wastewater systems currently in place), potential economic impacts of the proposed project, impacts on cultural resources (including historical, archeological, and ethnic resources), and, as appropriate, other significant social impacts that may result from project implementation.
- **Public Outreach Programs**—Communities must demonstrate that they have solicited public involvement during all phases of project activity, from project design to shutdown and deconstruction. Communities must develop a Comprehensive Community Participation Plan that will include the following components: a local steering committee; a schedule or process to assure a dialogue with local organizations; and a schedule or process that assures public involvement, including a minimum of two public meetings.
- **Project Final Designs**—These designs will be used during the construction and implementation of the project. These designs should be specific and detailed and clearly identify the technologies, process, equipment, and procedures that will be used during the construction, operation and maintenance, and closure of the project.
- **Operation and Maintenance Programs**—The operations and maintenance program plan addresses the community's plan for start up operations, contingency planning, general operation and maintenance relating to the project, safety programs, emergency plans, pollution prevention plans, and closure and post-closure plans.

#### CONTACT INFORMATION

PHYSICAL ADDRESS:  
Blvd. Tomas Fernandez,  
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C.P. 32470

MEXICAN P.O. BOX:  
Apdo. Postal 3114-J  
Cd. Juarez, Chihuahua

U.S. P.O. BOX:  
P.O. Box 221648  
El Paso, Texas 79913

Tel: (011-52-16) 25-91-60  
Fax: (011-52-16) 25-61-80  
E-mail: (enter employee's name)  
@cocef.org  
Home Page: <http://www.cocef.com>

#### TECHNICAL ASSISTANCE ELIGIBILITY REQUIREMENTS

**Funding is limited to one grant per community per year. To be eligible for technical assistance, a project sponsor must demonstrate the intention of obtaining BECC certification for the proposed project and also must meet the following requirements:**

- the project must be a water supply, wastewater treatment, solid waste, or related project;
- the project must have the potential to obtain BECC certification;
- the project must have interest and support from local authorities as demonstrated by the passage of a resolution, or other statement of commitment, indicating community and financial support for a project; and
- the project sponsor must be a public entity.

**For final design, technical assistance requests must comply with the following:**

- BECC certification;
- demonstration of initial commitment for construction money; and
- a determination that the applicant qualifies under the NADB's Border Environment Infrastructure Fund Protocol.

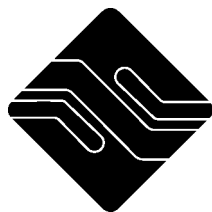
#### WHAT ACTIVITIES ARE NOT ALLOWED?

**Technical assistance is available only for completing pre-approval requirements, project planning, and design activities. Grant funds cannot be used for actual project construction or any of the following activities:**

- procurement or acquisition of parts and materials used in the construction of projects;
- purposes of establishing and maintaining a longterm monitoring program;
- private only projects;
- political activities such as lobbying/advocacy purposes; influencing legislation before Congress; or
- actions that could influence the outcome of a regulatory or adjudicatory action.

***For more information about the BECC's Technical Assistance Program or the process for obtaining BECC certification, please contact the Director of Technical Assistance at the address listed on the left hand margin.***





## NORTH AMERICAN DEVELOPMENT BANK INSTITUTIONAL DEVELOPMENT COOPERATION PROGRAM (IDP)

The North American Development (the Bank) was created by the United States and Mexico to provide financial assistance in solving environmental infrastructure problems along their shared border. Focusing its efforts on water, wastewater and municipal solid waste projects, the Bank's overall goal is to provide a clean, healthy environment in the border region by fostering a gradual transition from fully-subsidized projects to integrated, sustainable and fiscally-responsible projects, financed under competitive market conditions.

Since environmental infrastructure projects are complex, expensive to develop and difficult to manage, the need to maximize the operating conditions of existing utility systems is critical. Many public utilities in border towns in both countries, especially in small, low-income communities, have neither the solid institutional structure nor the financial capacity to undertake studies and implement reforms that would enable them to meet community needs adequately. In addition, there is a clear need to improve the credit rating and the quality of the projects and their sponsoring agencies in order to restructure municipal financing and channel more private capital to relevant projects.

To help address these needs, the Bank has created the Institutional Development Cooperation Program (IDP) as a crucial complement to its loan and guaranty program.

### OBJECTIVE

The IDP is designed to assist municipal public utilities achieve effective and efficient operation of their water, wastewater treatment, municipal solid waste, and related services by reinforcing their institutional capacities, and thus create a stronger financial foundation that will support the development of future infrastructure.

The IDP complements and works in close coordination with other development programs, including the Project Development Assistance Program (PDAP) administered by the Border Environment Cooperation Commission (BECC).

#### NOTE:

Receiving Bank assistance through the IDP or any other Bank sponsored assistance program does NOT imply or guarantee Bank project funding.

TO RECEIVE MORE INFORMATION ABOUT THE INSTITUTIONAL DEVELOPMENT COOPERATION PROGRAM, PLEASE SUBMIT THE INFORMATION SHEET FOUND IN APPENDIX C TO:

**North American Development Bank Department of Project Development and Finance**  
203 S. St. Mary's, Suite 400  
San Antonio, TX 78205  
Phone: (210) 231-8000  
Fax: (210) 231-6232  
<http://www.nadbank.org>

### CRITERIA

#### ELIGIBILITY

Public utilities dedicated to water wastewater, or municipal solid waste management located within 100 kilometers of the U.S.-Mexico border are eligible to receive support.

#### PRIORITIES

Priorities have been established based on the program's objectives, giving special preference to public utilities with viable projects that have failed to gain broader support due to institutional deficiencies.

Priority will be given, in the following order, to eligible utilities that have:

1. a BECC-certified project and need institutional strengthening to facilitate financing; or
2. submitted a Step I BECC certification application and need institutional strengthening to facilitate certification and financing; or
3. preliminary projects targeted at small, low-income communities and need institutional strengthening; or

4. a need for assistance in strengthening their institutional capacities, but do not have a specific project; or
5. a need for institutional strengthening in order to enhance privatization efforts.

Specific project priority will be reviewed in conjunction and cooperation with federal, state, and local authorities and the BECC.

## IMPLEMENTATION

The IDP will be implemented in two phases. During its initial phase, Bank personnel and resources will be dedicated, if necessary, to system reviews and evaluations of eligible utilities at no cost to the community served. In the second phase, a plan of action will be devised to address the needs of each utility based on the results of this evaluation, and resources may be allocated to improve information and administrative systems, provide training, and enhance other areas that have an impact on the financial structure of the utility.

### PHASE I:

#### SYSTEM EVALUATION

Assistance will initially be given to prepare system evaluations of the public utilities and other related studies.

The following areas are covered in the system evaluation:

*Infrastructure.* The infrastructure analysis determines the current status of the existing infrastructure, assesses projects under evaluation or construction, and evaluates future requirements. In the case of water supply, the following areas are included: water collection, conveyance, storage and control, treatment, pumping, distribution networks and connections. Wastewater may involve the following areas: sewer lines and collectors, pumping, drainage, sources of discharge and discharges. In the management of municipal solid waste, the following areas are covered: collection, transport, treatment, recycling, disposal and reuse.

*Technical-Operating Factors.* The technical and operating factors to be studied include: operation, maintenance and conservation policies and procedures; technology and equipment; inspection and control systems; leak detection and management; metering equipment; repairs; and databases for networks and for supervising sources of supply.

*Commercialization.* The evaluation of commercialization issues includes characteristics and trends in the user registry and demand; rate policies and schedules; the procedures for metering, reading and billing; collection procedures, historical data, controls and reports; policies and control of overdue accounts, delinquent accounts and penalties; customer service; public awareness campaigns; and marketing.

*Planning, Organization and Administration.* The planning, organization and administration evaluation will study the legal provisions in force; by-laws and the regulatory and institutional framework; planning system; organizational structure and development; procedure manuals; personnel policy; fixed assets, material resources and inventory policy and control; procurement and contracting policy and control; information systems and networks; decentralization, communication and delegation arrangements and administrative controls; and management and efficiency indicators.

*Budget and Accounting.* The budget and accounting studies will examine accounting procedures, accounts and reports; programming, budget and control systems; audits; fiscal framework; and analysis and control of balance sheets and income statements.

*Finances.* The evaluation of finances will consist of analyzing the system of financial data collection, projections, and reports; financial parameters and ratios; rate and risk analysis; reserve and investment policies; and the possible use of assets or income as collateral.

*Privatization Processes.* In the event a utility is being considered for privatization or concession, the analysis of the privatization process will examine the types of participation and contracts; regulatory framework; prequalification system; design of competitive and transparent processes; elements to be privatized; and all provisions, restrictions and penalties.

## PHASE II:

### PLAN OF ACTION

Based on the system evaluation, a plan of action will be formulated in coordination with the local authorities to help the utilities increase their managerial, operational, and service efficiencies. The main objective of the plan of action is to help utilities establish sound financial and managerial infrastructure and thus increase their operational capabilities, long-term credit capacity, and ability to deal with future system requirements.

### INFORMATION SYSTEMS AND DATA COLLECTION EQUIPMENT

When a system evaluation indicates that improvements are required in the information and data collection systems, the IDP can provide computers and other information systems equipment. This type of assistance is primarily aimed at developing or improving the metering, collection, accounting, and administrative systems. Training in the use of the new equipment and in the implementation of new procedures may also be provided under this program. .

### OPERATION

Assistance will be subject to the availability of funds. System evaluations may be conducted by Bank personnel or by external consultants hired by the Bank. The procurement of any goods and services under the program will be carried out in accordance with the Bank's procurement policies and procedures.

### COOPERATIVE ASSISTANCE

The IDP can help identify other assistance programs and sources of information regarding additional funding, technologies, technical and administrative training, water conservation measures, planning, and other related issues. Due to the alliances that the Bank has formed with other organizations, the Bank can facilitate integration of these support programs and funding sources to complement IDP assistance and other Bank operations. The system evaluation can determine whether or not a utility is eligible to receive assistance from other programs; and if so, guidance will be provided on how to request such assistance.

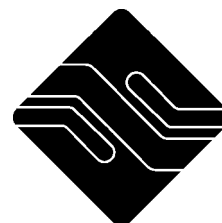
### COOPERATION OF UTILITIES

Development of the system evaluations and action plans requires the full cooperation of the utilities, which must ensure complete access to all pertinent information and sign a cooperation agreement with the Bank.

## NORTH AMERICAN DEVELOPMENT BANK

PROTOCOL FOR APPLICATION OF EPA AFFORDABILITY GUIDELINES  
TO U.S. WATER AND WASTEWATER PROJECTS UNDER THE

**BORDER ENVIRONMENT INFRASTRUCTURE FUND(BEIF)**



This protocol is updated periodically based on experience in applying it to diverse projects.  
Any changes must be approved by EPA.

1st edition - July 1997



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## INTRODUCTION

### PROTOCOL

This protocol was developed by the North American Development Bank (Bank) to explain the analysis used to apply United States Environmental Protection Agency (EPA) affordability guidelines to water and wastewater projects on the U.S.-Mexico border seeking grant assistance from the Border Environment Infrastructure Fund (BEIF). This protocol is directed to projects in the United States. EPA's affordability guidelines were issued by memorandum dated March 28, 1997, under the signature of Robert Perciasepe, Assistant Administrator, and are included in Appendix B of this protocol.

## THE BEIF AND ITS PURPOSE

### THE BORDER ENVIRONMENT INFRASTRUCTURE FUND

The Bank has established a Border Environment Infrastructure Fund to administer nonreimbursable resources for environmental infrastructure projects in the U.S.-Mexico border region. Pursuant to a Cooperative Agreement (Agreement) with EPA, EPA will make funds available to the BEIF and will allow those funds to be used to support EPA-approved projects in accordance with the terms and conditions specified in the Agreement. The Infrastructure Fund may be used for projects on both sides of the United States-Mexico border located within 100 km of the international boundary. To the extent that projects are financially assisted by any Mexican institution on the Mexican side of the border, or by state-sponsored programs on the U.S. side of the border, consultation with and support from the concerned agency or organization will be a critical factor in obtaining EPA agreement to proceed with grant support of a specific project. In all cases the EPA will make the final decision to provide grant assistance.

### PURPOSES OF THE BEIF

The goals of the BEIF are to:

1. Facilitate the expansion and improvement of water and wastewater environmental infrastructure in the United States-Mexico border region by providing coordinated financial support for the construction of projects and related activities.
2. Improve cooperation and coordination and assure the efficient flow of funds and the fiduciary soundness of financial management practices among all private and public sector parties with respect to financial support provided by those parties for constructing environmental infrastructure in the U.S.-Mexico border region, particularly with respect to financial cooperation among the Bank, EPA and CNA.
3. When appropriate, the BEIF will work in tandem with the Bank's Cooperative Credit Program, which, in conjunction with existing state and local programs, provides loan and loan guaranty support to small border communities that need environmental infrastructure improvements.

#### **AUTHORIZED USE OF BEIF FUNDS**

In order to make such projects affordable to the relevant community, EPA funds may be used in conjunction with grants and loans from other sources for the final design and construction of water and wastewater projects. A project may receive both transition and construction grant assistance from the BEIF.

1. Transition assistance may be used to ease a community's adjustment to higher user fees over time by providing capitalized interest funds over a 5 to 7-year period; or to foster regionalization by providing funds to support the debt service costs of regional plants as service levels reach targeted demand in neighboring communities.
2. Construction assistance may be used to pay final design and construction costs which are not funded by other sources,

#### **BASIC REQUIREMENTS FOR U.S. PROJECTS**

To be eligible for consideration for BEIF grant assistance, projects must meet EPA project selection criteria (see Appendix A), including associated affordability guidelines (see Appendix B). These guidelines include an eligibility benchmark that is explained below.

#### **AFFORDABILITY AND THE ELIGIBILITY BENCHMARK**

Affordability is a measure of a community's ability to pay the cost of water and wastewater infrastructure. Although other factors may be taken into consideration, the fundamental determinant of affordability is the ratio of cost per household to median household income (CPH/MHI). These terms and the method used to calculate them are explained below. The EPA uses a CPH/MHI benchmark of 1.7% to determine eligibility for construction grant funds under the BEIF. This is referred to as the Eligibility Benchmark. The EPA and the Bank expect communities to pay all project costs up to the point that CPH/MHI equals 1.7%. Projects with costs in excess of those that produce a CPH/MHI of 1.7% are ELIGIBLE for consideration of construction grant assistance from the BEIF. If a project requires rate increases related to debt service of 5% or more per year, the project is ELIGIBLE for transition grant assistance from the BEIF. A CPH/MHI in excess of 1.7% or rate increases related to debt service of 5% or more per year neither guarantee a commitment by EPA to provide any grant funds, nor signify a specific level of grant funding.

All funding decisions will be made on a project-by-project basis.

#### **BECC FINANCIAL FEASIBILITY CRITERION**

To receive BEIF grant assistance, a project must be certified by the Border Environment Cooperation Commission (BECC). An essential criterion that must be met for BECC certification is financial feasibility and project management. Financial Feasibility is a determination of whether or not revenues are sufficient to cover debt service and operations and maintenance (O&M) costs.

Financial Feasibility is different than Affordability. Affordability is a determination of whether debt service and O&M costs of a project when added to existing debt service and O&M result in a cost per household greater than 1.7% of median household income. This determination is made by the Bank and is required to be eligible for grant assistance from the BEIF.

## METHOD OF ANALYSIS

The Bank will use the following method to determine project affordability and make recommendations of BEIF grant assistance:

### CALCULATIONS TO DETERMINE PROJECT AFFORDABILITY

The project sponsor must provide a seven-year financial statement projection for its existing water and/or wastewater system. This must include a revenue and expense statement (income statement or profit and loss statement is also acceptable). This projection must show all revenue sources and all expenses including all operations and maintenance expenses as well as debt service (principal and interest). Balance sheet and cash flow statements are also requested.

The project sponsor must also provide a seven-year financial statement projection for the proposed project. This projection must show revenue generated by the project and related expenses including all operations and maintenance expenses as well as project-related debt service (principal and interest). For projection purposes, debt contracted for the project must be amortized over the useful life of the project or twenty-five years, whichever is lesser. Debt may include capitalized interest for the project construction period.

The seven-year projections of the existing system and the proposed project may be presented in one combined projection provided that the revenue and expense components of each are clearly identified. If consultant services are needed to assist in preparation of these projections, the Project Sponsor may apply to the BECC's Project Development Assistance Program to receive consideration for grant assistance.

All projections must be made in constant values (i.e. no inflation).

Projections should be made based on the project sponsor's fiscal year and the starting and ending date of the fiscal year should be specified. The project sponsor is responsible for the projections.

### RATE INCREASES

The projections must indicate rates charged and any rate increases that may be required in order for cash flow from the existing system and the proposed project to be sufficient to meet debt service, O&M expenses, debt service and O&M reserve requirements, equipment replacement requirements, and debt coverage ratio requirements.

Projects that provide first time service and do not have a rate history will be analyzed on a case-by-case basis in order to determine eligibility for BEIF transition grant assistance. The cost of the alternative means for delivery of water and wastewater service currently in use will be taken into consideration.

### COST PER HOUSEHOLD ("CPH") CALCULATION

Cost per household is calculated by dividing the sum of O&M and debt service costs attributable to household users by the number of households in the service area. O&M is calculated by adding the projected O&M of the existing system to the projected O&M of the proposed project. Debt service is calculated by adding the projected debt service of the existing system to the projected debt service of the proposed project. The amount of O&M and debt service attributable to household users is determined by multiplying the total amount of O&M and debt service by the percentage of the volume of water consumed by household users of the total volume of water billed to all users (household, commercial, industrial and governmental).

The O&M and debt service costs for both water and wastewater should be used in the CPH calculation.

The number of households is determined from the most recently available U.S. Census. In most cases, the most recently available U.S. Census data is from the 1990 Census that shows the number of households in 1989. The Bank will inflate this number by the historical five-year compound annual growth rate (CAGR) of the population of the service area. The U.S. Census Bureau definition of households ‘...includes the related family members and all unrelated persons,... A person living alone in a housing unit, or a group of unrelated persons sharing a housing unit as partners...’. The count of households excludes group quarters. This definition may vary from that used by many state agencies. For the purpose of calculating CPH, depreciation is not included as a cost.

#### **MEDIAN HOUSEHOLD INCOME (“MHI”) CALCULATION**

Median Household Income is calculated by taking the MHI from the most recently available U.S. Census and inflating it with the Consumer Price Index (“CPI”) available from the U.S. Bureau of Labor Statistics. The CPI most representative of the service area should be used. If available, the local CPI should be used. If a local CPI is not available, then the CPI of the next largest area or region shall be used.

#### **PROJECT SCOPE**

Grant assistance may be provided for stand-alone projects or projects that are part of a master plan or larger capital improvement program; however, the Bank strongly encourages projects to be part of a long-term master plan. In either case, the affordability analysis takes the financial projections of the existing system and adds the debt service and O&M costs of the proposed project. If grant assistance is requested for a project that is part of a larger capital improvement program, the project cost must be isolated from the cost of other components of the capital improvement program.

#### **SERVICE AREA**

Grant assistance is intended to benefit rate payers in the area that the project is designed to service. Provided that the project is within 100 kilometers of the U.S.-Mexico border, the physical location of a water or wastewater plant in the border city or community is not taken into consideration in the analysis.

#### **UNAVAILABLE DATA**

The Bank recognizes that data is unavailable or inadequate for some border communities. On a case-by-case basis, the Bank will determine alternative, objective sources of data that may be accepted to perform the affordability calculations.

#### **RESULTS OF CALCULATIONS**

If the calculations result in a cost per household greater than 1.7% of median household income, the project is ELIGIBLE for construction grant assistance from the BEIF. If a project requires rate increases related to debt service of 5% or more per year, the project is ELIGIBLE for transition grant assistance from the BEIF.

The purpose of grant assistance from the BEIF is to make high-priority water and wastewater projects affordable. The CPH/MHI measure of 1.7% is only used to determine eligibility and a project is deemed eligible if the CPH/MHI is in excess of 1.7% in any year of the 7-year projection. Project sponsors are expected to pay at least the debt service and O&M cost that result in a CPH/MHI of 1.7%. It is not intended for BEIF grant assistance to bring a project sponsor's CPH/MHI down to 1.7%.

## GLOSSARY OF TERMS

### **Affordability**

A measure of a community's ability to pay the cost of water and wastewater infrastructure.

### **Consumer Price Index (CPI)**

An index of prices used to measure the change in the price of basic goods and services in comparison to a fixed base period. The CPI is prepared by the U.S. Bureau of Labor Statistics.

### **Cost per Household**

The average of operations and maintenance and debt service costs attributable to a single household in a service area.

### **Debt Service**

On-going principal and interest payments.

### **Financial Statements**

Audited income statement, balance sheet and cash flow statement.

### **Household**

The person or people occupying a housing unit.

### **Median Income\***

The amount which divides the income distribution into two equal groups, half having incomes above the median, half having incomes below the median. The medians for households, families, and unrelated individuals are based on all households, families, and unrelated individuals. The medians for persons are based on persons 15 years old and over with income.

### **Operations and Maintenance Expenses (O&M)**

On-going expenses required for the efficient operation of a water or wastewater utility.

### **Regionalization**

The provision of water and wastewater services to a service area beyond a single community.

### **Service Area**

The area that includes rate payers whose rates will be affected by the project seeking BEIF grant assistance.

\*U.S. CENSUS BUREAU

## DETERMINATION OF GRANT ASSISTANCE

The Bank will determine basic eligibility for grant assistance utilizing the affordability analysis stated in this protocol and EPA's project selection criteria shown in Appendix A. Based on this initial determination of eligibility, the Bank shall be responsible for formulating proposals with respect to the appropriate mix of funds for transition and construction assistance, and shall present such proposals to EPA for its approval with an affordability analysis and sensitivity analysis.

The amount of grant assistance will vary on a project-by-project basis considering secondary factors such as the current debt burden of the project sponsor, the other sources of funding available, available grant resources, the ability of the project sponsor to assume debt to finance the project, and key socioeconomic indicators such as high unemployment in the service area. Consideration will be given to the rate structure resulting from the project compared to average regional rates.

Projects that can benefit from regionalization of facilities or services should not be adversely affected in terms of the priority, amount, or type of grant funding as a result of selecting a regional alternative.

EPA will provide the Bank with written response to each financing proposal. Projects that are approved for financing from the BEIF will include a specific financial commitment to that project. The decision will be based on the "deal sheet" setting forth the Bank's complete analysis of the project and addressing both EPA's project selection criteria and the Bank's Loan and Guaranty Policies and Operational Procedures. In all cases, the EPA makes the final decision to provide the Bank's BEIF grant assistance.

Upon receipt of EPA's final decision, the Bank will provide the Project Sponsor with written notice of such decision. Copies of that notice shall be provided to EPA, the associated state and community (if other than the Project Sponsor).

## CHECKLIST OF INFORMATION REQUIRED FOR AFFORDABILITY ANALYSIS

1. Seven-year cash flow projection of existing water and wastewater system that takes into consideration O&M expenses and debt service for existing system.
2. Seven-year cash flow projection of proposed project that takes into consideration O&M expenses and debt service for the proposed project.
3. Number of households in service area. Use U.S. Census Bureau definition of "Household".
4. Consumer Price Index for the service area for 1990-1996.
5. Water and wastewater volume by user type (commercial, industrial, residential, governmental)
6. Capital improvement program with all project descriptions and estimated costs. If any projects are in process, include amount spent to date and approximate percentage of completion.
7. Any additional documentation that would create an accurate and complete picture of the project sponsor's financial capability.

## AFFORDABILITY ANALYSIS FOR ANY BORDER CITY, ANY BORDER STATE

		1	2	3	4	5	6	7
	Census 1990	Fiscal Year 1998	Fiscal Year 1999	Fiscal Year 2000	Fiscal Year 2001	Fiscal Year 2002	Fiscal Year 2003	Fiscal Year 2004
O&M Existing Water System <sup>1</sup>		20,000,000	20,500,000	21,000,000	21,500,000	22,000,000	22,500,000	23,000,000
O&M Existing Wastewater System <sup>1</sup>		28,600,000	29,000,000	29,600,000	30,200,000	30,700,000	31,500,000	32,100,000
O&M New Project <sup>3</sup>		10,000,000	10,250,000	10,500,000	10,750,000	11,000,000	11,250,000	11,500,000
Debt Service Existing Water System <sup>1</sup>		7,000,000	7,200,000	7,400,000	7,600,000	7,800,000	8,000,000	8,200,000
Debt Service Existing Wastewater System <sup>1</sup>		10,000,000	10,300,000	10,600,000	10,900,000	11,200,000	11,500,000	11,800,000
Additional Debt Service New Project <sup>3</sup>		4,000,000	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000
Cash Expenses for Current Operations		79,600,000	81,250,000	83,100,000	84,950,000	86,700,000	88,750,000	90,600,000
Household Water Usage (gd) <sup>1</sup>		50,000,000	51,000,000	52,500,000	54,000,000	55,500,000	57,000,000	59,000,000
Commercial Water Usage (gd) <sup>1</sup>		8,000,000	8,150,000	8,300,000	8,450,000	8,600,000	8,750,000	8,900,000
Industrial Water Usage (gd) <sup>1</sup>		5,000,000	5,050,505	5,105,105	5,205,206	5,305,305	5,405,405	5,505,505
Governmental Water Usage (gd) <sup>1</sup>		20,000,000	20,200,000	20,500,000	20,700,000	21,000,000	21,350,000	21,500,000
Percentage of Cash Expenses Attributable to Households		60.24%	60.43%	60.76%	61.12%	61.39%	61.62%	61.17%
Number of Households <sup>4</sup>	90,000	102,905	104,449	106,015	107,606	109,2205	110,8585	112,521
Annual Cost Per Household (CPH)		\$ 465.98	\$ 470.05	\$ 476.27	\$ 482.49	\$ 487.32	\$ 493.30	\$ 500.56
Any Border City Median Household Income (MH) <sup>5</sup>	\$ 20,000	\$ 25,600	\$ 26,022	\$ 26,451	\$ 26,887	\$ 27,330	\$ 27,781	\$ 28,239
CPH as a Percentage of Any Border City MHI		1.82%	1.81%	1.80%	1.79%	1.78%	1.78%	1.77%
Benchmark		1.70%	1.70%	1.70%	1.70%	1.70%	1.70%	1.70%

<sup>1</sup> Any Border City Waterworks 7-Year Financial Plan<sup>2</sup> Book, Engs & Billings Consulting Engineers, Inc. Project Forecast for Any Border City<sup>3</sup> Raitts & Markups Financial Advisors<sup>4</sup> 1990 U.S. Census Data. Population inflated by CAGR of 1.5% per year 1989-1998.<sup>5</sup> 1990 U.S. Census Data. MHI inflated by local CPI of 28% from 1989 through 1998 and then inflated by estimated CPI of 1.65% per year for 1999-2004.

## EPA PROJECT SELECTION CRITERIA

- (1) Projects must address priority human health and/or ecological issues. Priority will be given to those projects likely to have the most impact.
- (2) Projects must have U.S.-side benefits. Priority will be given to those projects with benefits on both sides of the border.
- (3) BECC-certified projects only will be selected (except for projects already underway).
- (4) Priority will be given to projects with maximum funding from other sources and where program funding is necessary to complete financing of the project.
- (5) Adequate planning and operations and maintenance provisions are prerequisites to detailed design and construction financing.
- (6) Community infrastructure only will be selected.
- (7) For drinking water projects, drinking water quality projects only will be selected, not raw water supply. Therefore, only drinking water treatment plants and treated water distribution systems will be covered.
- (8) Projects where the discharge is directly or indirectly to U.S.-side waters, must target achievement of U.S. norms for ambient water quality in U.S.—side waters, although infrastructure development may be phased over time. Any flow reductions that result from implementation of non-discharging alternatives must not threaten U.S. or shared ecosystems.



## EPA'S AFFORDABILITY GUIDELINES

### MEMORANDUM

SUBJECT: Border Infrastructure Grants Program Project Affordability Guidelines

FROM: Robert Perciasepe, Assistant Administrator  
TO: Regional Administrators Region IX and Region VI

My memorandum of September 12, 1996, established the eight Project Selection Criteria the Environmental Protection Agency (EPA) will use in determining which eligible border area projects will have the highest priority for EPA grants. One specific criterion (the affordability criterion) states that priority will be given to projects with maximum funding from other sources and where program funding is necessary to complete financing of the project. We have received several requests that we further refine this specific criterion to provide a clear statement of which projects have highest priority based on the ability of the project sponsor to obtain financing from other sources and the effect of grant funding on the affordability of the project to the ultimate users. This memorandum clarifies and further elaborates the affordability criterion for grant funding.

The basic concept is that grant funds be applied toward projects where the value of the grant funds has the greatest marginal benefit. In general, the marginal benefit is increased when the grant funds are used in tandem with other financial resources and when the assistance is targeted toward project costs that are above what could normally be financed by the project sponsor's sources of credit. Furthermore, grant funding is very important when the costs to the ultimate users (rate payers) from the use of credit mechanisms result in rate increases that are not sustainable or realistic.

#### THE POLICY

Funding priority will be given to eligible water and wastewater projects where grant funding is essential to make facilities affordable to their ultimate users. This broad statement of policy applies to projects on either side of the border.

The implementation of this policy should be tailored to accommodate the differences in the U.S. and Mexico regarding governmental organizations, institutional relationships and responsibilities, financial instruments and information required to support project financing.

#### THE PROCESS

For projects on either side of the border the process involves the following:

1. Before obtaining a formal financial commitment from EPA for construction funding, the project sponsor (generally with the support of North American Development Bank (NADBank) and in conjunction with the project development efforts of the Border Environment Cooperation Commission (BECC)) must conduct a financial analysis of the existing water and wastewater system and the proposed improvements to determine the capital, operating and maintenance costs of the existing system and the changes in local costs associated with the proposed project.

2. When construction funding is formally requested under the EPA-NADBank Cooperative Agreement, the EPA's regional offices must review the NADBank's submission and accompanying analysis addressing the affordability of a project. The NADBank submission should provide detail on the financial feasibility of the project and the estimated user burden associated with the project proposal. The submission should provide information adequate to determine capital and operating costs, sources of funding and financial feasibility of the project. In the context of the cooperative agreement, two financial mechanisms are available; a buy down of project costs or transition assistance that makes loan repayments affordable to the ultimate users.

#### THE GUIDANCE

In Mexico, Comisión Nacional Del Agua (CNA) applies its formula for determining which projects are deemed affordable. The results of this financial analysis, on the Mexican side, will be reflected in the BECC's certification documents and in the NADBank's financing proposals. On the U.S. side of the border, the guidance and benchmark measures described in this memorandum establish a framework for conducting an affordability assessment.

An affordability assessment should identify current operations and maintenance and debt retirement costs and estimate the changes in operations and maintenance and financing costs that relate to the proposed project. The financial analysis should consider alternatives for the project sponsor to proceed with construction of the project based on a combination of financing and grant funding of the proposed costs. The benchmark measures contained in this memorandum establish guidelines on identifying projects that appear to be affordable without EPA grant funding. For the most part, projects that are affordable should be financed with maximum reliance on loan and credit mechanisms.

A consistent approach to establishing costs is an essential element in conducting a financial assessment of the proposed project- The following general steps are applicable to establishing a cost basis for both water and wastewater projects:

1. Determine the project sponsor's total project costs by establishing the current costs for existing water or wastewater services and estimate the changes in annualized cost for any proposed project.
  - a. The current costs are defined as current annual operating and maintenance expenses (excluding depreciation) plus current annual debt service (principal and interest). This represents the cash expenses for current operations.
  - b. The estimated project costs for the proposed project should include projected changes in operation and maintenance and debt service expenses. These costs are adjusted to current dollars (i.e. deflated).
2. After estimating changes in the annualized costs that result from the proposed project, then calculate the residential share of the total costs. The residential or household costs should exclude the portion of expenses attributable to commercial, governmental and industrial users.
3. Determine the project's financial impact on users in the context of the benchmark measures established in this memorandum.

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**BENCHMARK MEASURES FOR ASSESSING THE IMPACT OF  
U.S. WATER AND WASTEWATER PROJECT COSTS ON USERS**

The following benchmark measures will help evaluate user burden and the amount and type of funding assistance required.

1. Consider the project sponsor's cost per household (CPH) as a percentage of the local median household income (MHI). If the current and estimated project costs of the water and wastewater services result in a CPH of less than 1.7 percent of MHI, the project has a low impact and should be considered affordable. Project sponsors should be expected to fully finance costs that are within the affordable range. For costs that are above the benchmark level, the appropriate amount of grant funding and type of assistance will vary on a project-by-project basis considering secondary factors such as the current debt burden of the project sponsor, other sources of funding available, the ability of the project sponsor to assume debt to finance the project, and key socioeconomic indicators such as high unemployment in the service area.
2. Focus on the rate increases that result from the credit financing of the proposed project. If the debt retirement related increases exceed 5 percent per annum, it may be difficult to sustain the rate increases and some form of transition assistance from this program should be a priority — working in conjunction with available sources of credit. If the debt retirement increases exceed 10 percent per annum, the additional user burden has a high impact that may not be adequately addressed under a five-to seven-year transition fund arrangement, and grant financing may be necessary to buy down the costs of the proposed project. Again, as in the example of the above benchmark measures, the project sponsors should be expected to finance costs below the benchmark measures.

Projects that are determined to exceed the above benchmark measures and thus receive EPA funding are expected to proceed to construction as soon as appropriate approvals can be rendered. Projects that can benefit from regionalization of facilities or services should not be adversely affected in terms of the priority, amount, or type of grant funding as a result of selecting a regional alternative.

**IMPLEMENTATION**

This affordability policy will be implemented through EPA's Cooperative Agreement with the NAD Bank. Under the cooperative agreement the NADBank will be charged with preparing project affordability and financial feasibility assessments.

If you have questions, contact me or Fred Lindsey at (202)260-5853.

## GLOBAL TECHNOLOGY NETWORK (GTN)



## GLOBAL TECHNOLOGY NETWORK (GTN)

...the point of contact for U.S. firms interested in business opportunities in USAID countries

## U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

The United States Agency for International Development (USAID) is an independent government agency that provides economic development and humanitarian assistance to advance U.S. economic and political interests overseas. USAID supports programs aimed at:

- promoting sustainable economic growth,
- stabilizing population growth and protecting human health,
- protecting the environment,
- advancing democracy,
- providing humanitarian relief, and
- assisting nations in transitions.

## GLOBAL TECHNOLOGY NETWORK (GTN)

USAID's Global Technology Network (GTN) facilitates the transfer of U.S. technology to USAID-assisted countries and regions. As USAID missions and local partners identify problems, GTN, through its databases, can match the developing country's needs with specific U.S. companies having the appropriate technologies to address the problem. Through this process, GTN promotes the use of private sector solutions and approaches in USAID development assistance programming.

GTN focuses on identifying targeted international business opportunities in health, energy and environment, agribusiness, and information technology. Opportunities are identified by the USAID missions and a network of participating in-country public and private sector technical representatives. The technology opportunities/trade leads are electronically matched with U.S. firms registered in GTN's sector databases. Trade lead information is then faxed to the appropriate U.S. companies.

## GLOBAL TECHNOLOGY SECTORS

### ENVIRONMENTAL TECHNOLOGY

GTN has the resources of 2,000 U.S. environmental firms covering 484 different sub-sectors within the environment. This network provides USAID missions and developing countries access to a database that can make a very targeted match of U.S. technology with a specific environmental requirement. GTN currently manages two regionally focused environmental networks, the Americas and Asia.

The Environmental Technology Network for Asia was developed by USAID's Global Bureau and the United States-Asia Environmental Partnership (US-AEP). ETNA facilitates the transfer of U.S. environmental technology to address environmental concerns in India, Indonesia, Philippines, Sri Lanka, Thailand, and other parts of Asia. The U.S. Department of Commerce provides USAID with in-country environmental information.

The Environmental Technology Network for the Americas is a joint program between USAID's Global Bureau and the U.S. Department of Commerce. ETNA facilitates the transfer of U.S. environmental

technology to address environmental concerns in Bolivia, Brazil, Ecuador, Mexico, Paraguay, Peru, Argentina, Chile, Costa Rica, and other parts of Latin America.

#### **AGRICULTURE TECHNOLOGY**

GTN uses 80 sub-sectors within four basic areas in agribusiness: agricultural systems development supports institutions; better management of improved and sustainable agricultural practices; and, enhancement of social, economic, and technical capacities of agribusinesses for a more effective use of outside resources. The production codes address agricultural inputs. The range of processing and post harvest management includes post harvest technology, transformation, storage, packaging, finished-product marketing, distribution, quality control, and infrastructure development. Agricultural products are listed by basic commodity categories.

#### **HEALTH & POPULATION TECHNOLOGY**

GTN developed 70 sub-sectors covering basic areas in the health and population field in order to strategically identify and track health and population needs in developing countries. Included are health and population care centers; education; economics; manpower; management; service delivery; vehicles; environment; medical supplies/equipment; and pharmaceuticals.

#### **COMMUNICATION & INFORMATION TECHNOLOGY**

GTN tracks a broad range of activities such as computer technology, education and training, and telecommunication infrastructure. These activities are based on five principles: (1) encouraging private investment, (2) promoting competition, (3) creating a flexible regulatory framework, (4) providing open access, and (5) ensuring universal access.

#### **AFRICA TECHNOLOGY NETWORK (ATN)**

ATN is network designed to foster economic growth through private partnerships, investment, and technology transfer. Firms are registered in GTN's internet based Advanced Trade Lead System (ATLaS) which links the U.S. companies with opportunities throughout Sub Saharan Africa. ATN is a joint activity of USAID's Global and Africa Bureaus, and is funded by the Leland Initiative.

#### **CENTER FOR TRADE & INVESTMENT SERVICES (CTIS)**

Business Counseling - CTIS provides in-depth international business counseling to firms interested in contracting and procurement opportunities with USAID, and /or expanding to those markets where USAID has a presence.

Information Services & Publications - CTIS develops and disseminates comprehensive industry and regional business resource guides on USAID and international development programs.

Conference Marketing - CTIS assists USAID Missions and related organizations in marketing conferences, seminars, and workshops that complement the strategic objectives of USAID.

## GTN GLOBAL TECHNOLOGY NETWORK

### Contact Information

Address: Global Technology Network  
USAID,G/EG/BD/GTN  
515 22nd Street N.W., Suite 100, SA-2  
Washington, D.C. 20523-0229

Telephone:  
toll-free (800) 872-4348  
local (202) 663-2660

REGIONS/SECTORS	EXTENSION
General Information	1
<b>Health and Population &amp;</b> New Independent States (former Soviet Union)	2
<b>Information &amp; Communications Technology</b> Central and Eastern Europe	3
<b>Africa Technology Network &amp;</b> Sub-Saharan Africa/Agribusiness	4
Asia and the Near East/Environment	5
Latin America and the Caribbean	6
<b>Environmental Technology Network for the Americas</b>	7

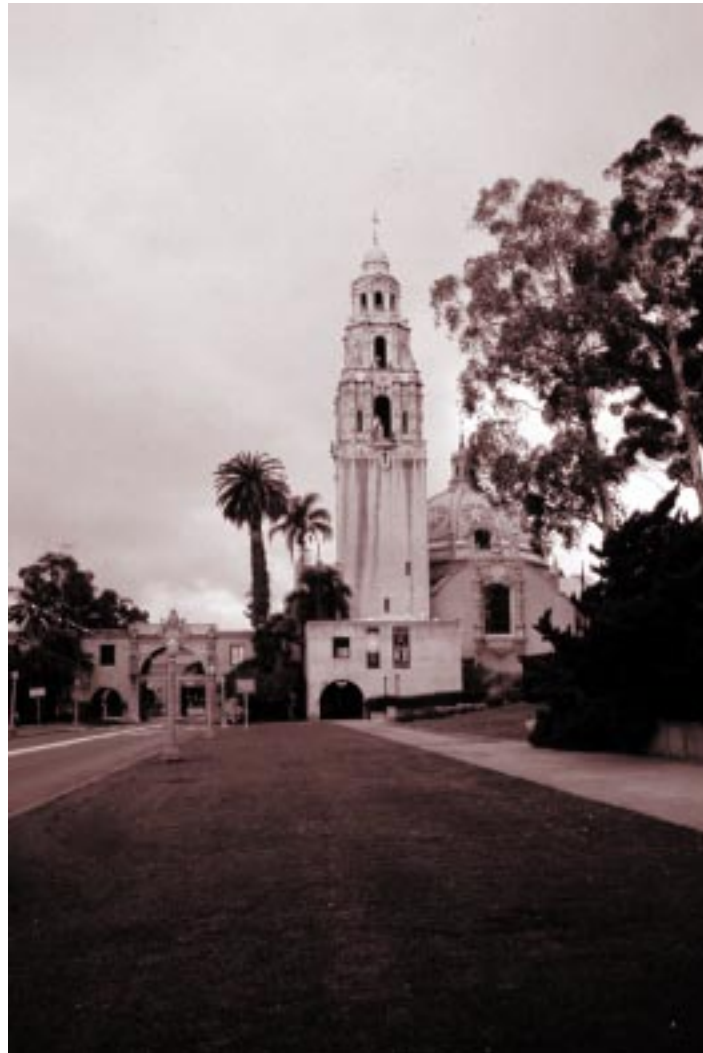
### Environmental Technology Network for Asia (800) 818-9911

(202) 663-2670  
CTIS@USAID.GOV  
[www.info.usaid.gov/business/ctis](http://www.info.usaid.gov/business/ctis)





# APPENDIX



BALBOA PARK, SAN DIEGO, CALIFORNIA

**APPENDIX A**  
Letter to Project Proponents

**APPENDIX B**  
BECC Step I: Pre-Proposal  
Form

**APPENDIX C**  
NADB IDP Information Sheet

**APPENDIX D**  
Global Technology Network  
Registration Form and Codes

**APPENDIX E**  
Atlernate Financing Services

## LETTER TO PROJECT PROPONENTS





GOBIERNO DEL ESTADO  
LIBRE Y SOBERANO DE  
BAJA CALIFORNIA

**California Border Environmental Cooperation Committee**  
**Comisión de Cooperación Ecológica Fronteriza de las Californias**

June 16, 1997

**Mr. Peter M. Rooney**  
CHAIR

**M.C. Adolfo Gonzalez Calvillo**  
MEMBER

**Ms. Joan Milke Flores**  
MEMBER

**Ing. Fernando Aceves Salmon**  
MEMBER

**Julie Meier Wright**  
MEMBER

**Lic. Jorge Gallego Salas**  
MEMBER

**Lic. Ramon Salido Almada**  
MEMBER

Dear Interested Party:

In an effort to strategically position California for maximum funding from the North American Development Bank (NADBank) and the United States Environmental Protection Agency for environmental infrastructure projects, and as the designated California Environmental Protection Agency Representative for California-Mexico issues, I would like to cordially invite you to provide input to the 1997 California-Baja California Border Environment Needs Assessment Report.

In 1995, the first report of this type was published. It addressed many infrastructure projects along with non-infrastructure environmental related projects. In order to provide the most useful report possible, the 1997 Report will focus on the three priority areas established by the Border Environment Cooperation Commission (BECC). These are: potable water supply, waste water collection, treatment and disposal and municipal solid waste. The report will be prepared jointly with our Baja California counterparts.

By providing an updated version of the California Border Environment Needs Assessment Report, California and Baja California will highlight their environmental infrastructure needs and will have the opportunity to prepare themselves in seeking construction, and technical assistance grants for infrastructure projects from the BECC and NADBank. These grants will be based on community need and will be awarded on a first come first serve basis.

I urge you to participate in this worthwhile project by providing the information outlined in the enclosed information sheet, by September 3, 1997. We would like to have a finished report ready for distribution by October 1997. Therefore, time is of the essence.

For your information, we have enclosed printed information on the BECC, the NADBank and the California Border Environmental Cooperation Committee (Cal/BECC). Additionally, the BECC Project Certification Criteria may be accessed at <http://cocef.interjuarez.com> via the Internet or can be requested by fax to:

Attn. Ricardo Martinez, (916) 227-4349.

Now, more than ever, your opportunity to identify, plan and fund your infrastructure projects is at hand. Projects included in this report will be presented by California and Baja California to federal and binational funding agencies for potential financial or technical assistance. Please send your information no later than September 3, 1997 in the format described in the enclosed information sheet to:

Ricardo Martinez, Cal/BECC Coordinator  
2014 T Street, Suite 130  
Sacramento, CA 95814

If you should require additional information, please call Mr. Ricardo Martinez, Cal/BECC coordinator, at (916) 227-4328 or Mr. Paulino Luna, Waste Management Engineer at (916) 255-3882.

Sincerely,

**James M. Stubchaer**  
**Vice Chair**  
State Water Resources Control Board

enclosures

## BECC STEP I PRE-PROPOSAL FORM



DESERT REGION NEAR THE IMPERIAL VALLEY

# ***Border Environment Cooperation Commission***

## **STEP I: PRE-PROPOSAL**

Date of Submittal to the BECC \_\_\_\_\_

Date of Receipt by the BECC \_\_\_\_\_

### **NAME AND TYPE OF PROJECT**

#### **1. NAME OF THE PROJECT:**

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#### **2. TYPE OF INFRASTRUCTURE:**

- |          |                      |          |                        |
|----------|----------------------|----------|------------------------|
| A. _____ | Water Supply         | C. _____ | Solid Waste Management |
| B. _____ | Wastewater Treatment | D. _____ | Other Related Projects |

### **PROJECT DESCRIPTION**

#### **3. BRIEF PROJECT DESCRIPTION:**

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### **PRIMARY APPLICANT**

#### **4. NAME OF THE ORGANIZATION:**

Name of Contact Person: _____		
Position: _____		
Address: _____		
City: _____	State: _____	Zip Code: _____
Phone No.: _____	Fax No.: _____	
E-mail Address: _____		

**CO-APPLICANT (IF APPLICABLE)****5. NAME OF THE ORGANIZATION:**

Name of Contact Person:

Position:

Address:

City:

State:

Zip Code:

Phone No.:

Fax No.:

E-mail Address:

**CONTRACTOR (IF APPLICABLE)****6. NAME OF THE FIRM:**

Name of Contact Person:

Position:

Address:

City:

State:

Zip Code:

Phone No.:

Fax No.:

E-mail Address:

**GENERAL PROJECT INFORMATION**

7. LOCATION OF PROJECT SITE:

Mexico \_\_\_\_\_

U.S.A. \_\_\_\_\_

8. NEAREST City: \_\_\_\_\_ State: \_\_\_\_\_

9. DISTANCE FROM NEAREST CITY (in miles): \_\_\_\_\_

10. NO. OF PERSONS IN NEAREST CITY: \_\_\_\_\_

11. POPULATION BENEFITED: \_\_\_\_\_

12. WITHIN BORDER REGION? (62 mi) Yes \_\_\_\_\_ No \_\_\_\_\_

IF NO: HOW DOES THE PROJECT AFFECT THE BORDER REGION?

13. TYPE OF PROJECT: Public \_\_\_\_\_ Public/private partnership \_\_\_\_\_

Private-only project designed to address local or regional needs \_\_\_\_\_

Private-only project designed to address the sponsor's pollution problems \_\_\_\_\_

14. TYPE OF PROJECT: New \_\_\_\_\_ Expansion \_\_\_\_\_ Rehabilitation \_\_\_\_\_

15. ESTIMATED USEFUL LIFETIME OF THE PROJECT: \_\_\_\_\_ years

## DESCRIPTION OF THE PROJECT

### A. IF THE PROJECT IS RELATED TO WATER SUPPLY, IT CONCERNS:

16. DEVELOPMENT OF A WATER SOURCE: Yes \_\_\_\_\_ No \_\_\_\_\_
17. WATER TREATMENT: Yes \_\_\_\_\_ No \_\_\_\_\_
18. WATER DISTRIBUTION: Yes \_\_\_\_\_ No \_\_\_\_\_
19. CONTROL OF SUPPLY IN DISTRIBUTION SYSTEM: Yes \_\_\_\_\_ No \_\_\_\_\_
20. PUMP STATIONS AND SUMPS: Yes \_\_\_\_\_ No \_\_\_\_\_
21. WATER TRANSMISSION LINES: Yes \_\_\_\_\_ No \_\_\_\_\_

22. OTHER:

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### B. IF THE PROJECT IS RELATED TO WASTEWATER TREATMENT, IT CONCERNS:

23. TYPE OF WASTEWATER : Municipal \_\_\_\_\_ Industrial \_\_\_\_\_
24. SEWER SYSTEM: Yes \_\_\_\_\_ No \_\_\_\_\_
25. COLLECTOR TRUNK LINES: Yes \_\_\_\_\_ No \_\_\_\_\_
26. WASTEWATER TREATMENT PLANTS: Yes \_\_\_\_\_ No \_\_\_\_\_
27. WATER REUSE: Yes \_\_\_\_\_ No \_\_\_\_\_
28. DISCHARGE OF TREATED WASTEWATER: Yes \_\_\_\_\_ No \_\_\_\_\_
29. TREATMENT OF WASTEWATER GENERATED SLUDGE: Yes \_\_\_\_\_ No \_\_\_\_\_
30. DISPOSAL OF WASTEWATER GENERATED SLUDGE: Yes \_\_\_\_\_ No \_\_\_\_\_

31. OTHER:

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### C. IF THE PROJECT IS RELATED TO MUNICIPAL SOLID WASTE, IT CONCERNS:

32. RECOVERY OF RECYCLABLE MATERIALS: Yes \_\_\_\_\_ No \_\_\_\_\_

33. TREATMENT OF MUNICIPAL SOLID WASTE:

Composting \_\_\_\_\_

Incineration \_\_\_\_\_

Power Generation \_\_\_\_\_

34. DISPOSAL OF MUNICIPAL SOLID WASTE:

Transfer Stations \_\_\_\_\_

Sanitary Landfill \_\_\_\_\_

35. OTHER:

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**D. IN CASE OF OTHER RELATED PROJECTS PLEASE INDICATE RELATIONSHIP:**

36. PREVENTION, CONTROL, OR REMEDIATION OF POLLUTION RELATED TO:

Water Supply

Yes \_\_\_\_\_

No \_\_\_\_\_

Treatment of Wastewater

Yes \_\_\_\_\_

No \_\_\_\_\_

Municipal Solid Waste Disposal

Yes \_\_\_\_\_

No \_\_\_\_\_

How is the Project is Related to at Least One of the Three Previously Mentioned Subjects:

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**PROJECT PLANNING INFORMATION**

THE PROJECT ALREADY HAS COMPLETED:

37. ENVIRONMENTAL ASSESSMENT:

Yes \_\_\_\_\_

No \_\_\_\_\_

38. PRELIMINARY ENGINEERING STUDY:

Yes \_\_\_\_\_

No \_\_\_\_\_

39. TECHNICAL FEASIBILITY STUDY:

Yes \_\_\_\_\_

No \_\_\_\_\_

40. FINANCIAL FEASIBILITY AND PROJECT MANAGEMENT STUDY:

Yes \_\_\_\_\_

No \_\_\_\_\_

41. PRELIMINARY DESIGN:

Yes \_\_\_\_\_

No \_\_\_\_\_

42. FINAL DESIGN:

Yes \_\_\_\_\_

No \_\_\_\_\_

43. COST ANALYSIS:

Yes \_\_\_\_\_

No \_\_\_\_\_



44. COST ESTIMATE FOR:

Final Design Development:	_____	\$U.S.
Construction of Facilities:	_____	\$U.S.
Operation & Maintenance (annual):	_____	\$U.S.
Financing Costs (annual):	_____	\$U.S.

45. ESTIMATE THE TIME REQUIRED FOR EXECUTION OF:

Planning:	_____ months	Environmental Assessments:	_____ months
Design:	_____ months	Permits	_____ months
Construction:	_____ months	Preparation of Site:	_____ months
		Plant Start-up:	_____ months

Total Time Required: \_\_\_\_\_ months

46. HAVE POTENTIAL SOURCES OF FINANCING BEEN IDENTIFIED? Yes \_\_\_\_\_ No \_\_\_\_\_

Indicate Which and the Percentage that may be Contributed by Each:

_____ MUNICIPAL	_____ %	_____ STATE	_____ %
_____ FEDERAL	_____ %	_____ NADBANK	_____ %
_____ WORLD BANK	_____ %	_____ PRIVATE BANK	_____ %
_____ NON-GOVERNMENTAL		_____ INTERAMERICAN ORGANIZATIONS	_____ %
DEVELOPMENT BANK	_____ %	_____ EQUITY	_____ %
		_____ OTHER	_____ %

47. WHAT WILL BE THE SOURCE OF REVENUE FOR REPAYMENT OF THE LOANS? (mark all that apply):

a) _____ Government	b) _____ Serviced Users	c) _____ Industrial Clients
d) _____ Other	e) _____ In Process of Identification	

48. PUBLIC MEETINGS HAVE BEEN HELD IN THE COMMUNITY: Yes \_\_\_\_\_ No \_\_\_\_\_

49. PUBLIC PARTICIPATION PLAN HAS BEEN DEVELOPED: Yes \_\_\_\_\_ No \_\_\_\_\_

50. WILL THE APPLICANT REQUEST RECOGNITION FOR HIGH SUSTAINABILITY FOR THIS PROJECT? Yes \_\_\_\_\_ No \_\_\_\_\_

## TECHNICAL ASSISTANCE

51. TO REQUEST TECHNICAL ASSISTANCE, IDENTIFY THE AREAS AND THE APPROXIMATE FUNDING NEEDED. (A Technical Assistance Manual is currently under development. Additional information may be required of the applicant):

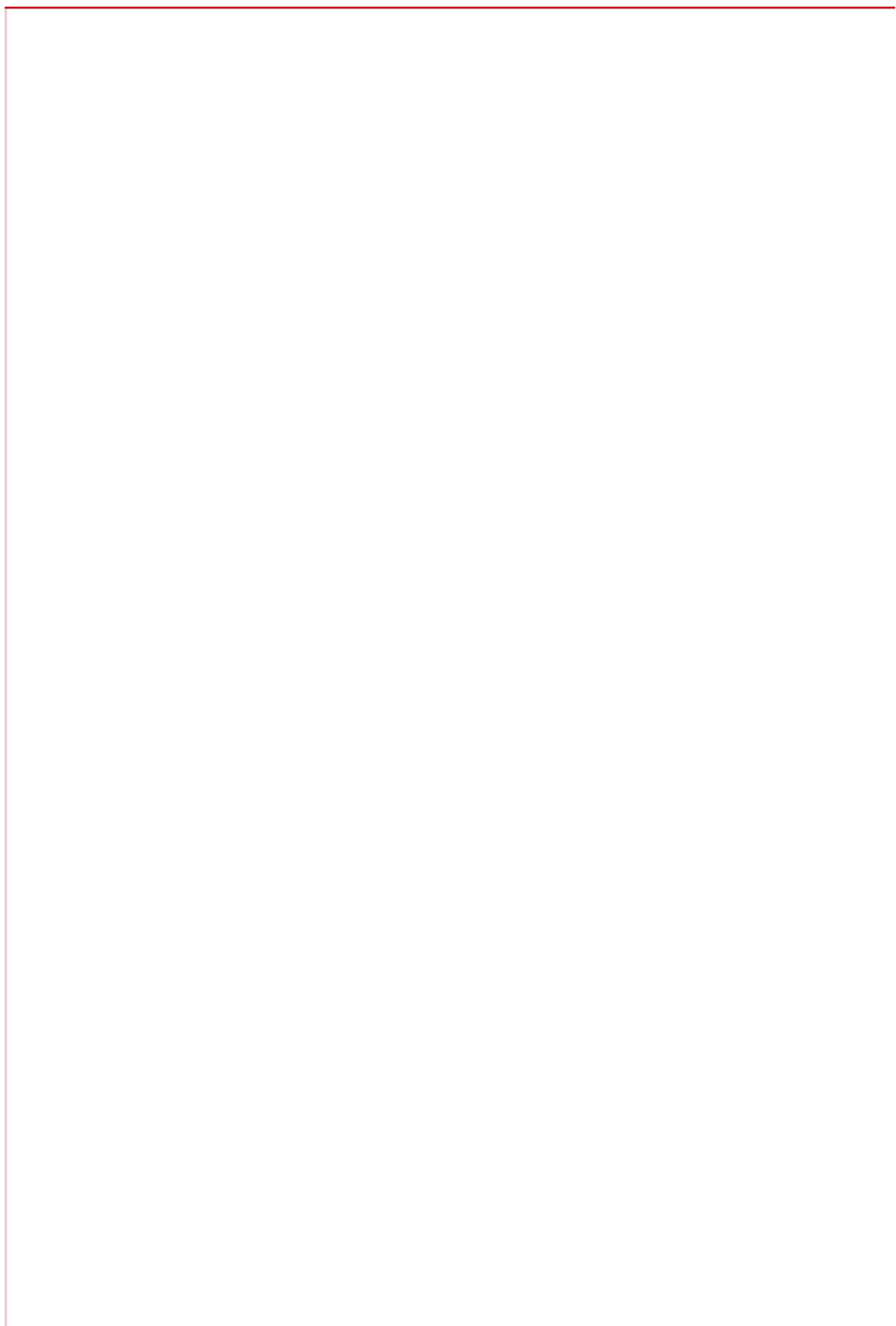
### A. CONCEPT DEVELOPMENT:

- |    |       |  |          |
|----|-------|--|----------|
| a) | _____ | Water/Wastewater Master Plan                     | \$ _____ |
| b) | _____ | Project Definition/Identification of Issues      | \$ _____ |
| c) | _____ | Analysis of Alternatives & Cost Comparison       | \$ _____ |
| d) | _____ | Planning   | \$ _____ |
| e) | _____ | Preliminary Environmental Assessment of the Site | \$ _____ |
| f) | _____ | Preliminary Technical Feasibility                | \$ _____ |
| g) | _____ | Preliminary Financial Feasibility                | \$ _____ |
| h) | _____ | Other  | \$ _____ |

### B. ADVANCE FUNDING:

- |    |       |  |          |
|----|-------|--|----------|
| a) | _____ | Environmental Assessment                                   | \$ _____ |
| b) | _____ | Technical Feasibility Study                                | \$ _____ |
| c) | _____ | Development of Preliminary Engineering Design              | \$ _____ |
| d) | _____ | Development of Final Engineering Design                    | \$ _____ |
| e) | _____ | Development of Operation & Maintenance Plan                | \$ _____ |
| f) | _____ | Preparation of Financial Statements                        | \$ _____ |
| g) | _____ | Financial Feasibility Study                                | \$ _____ |
| h) | _____ | Development of Rate Schedule                               | \$ _____ |
| i) | _____ | Analysis of City Operated vs. Concession of Services       | \$ _____ |
| j) | _____ | Study of Institutional Capacity Building                   | \$ _____ |
| k) | _____ | Evaluation of Social Issues                                | \$ _____ |
| l) | _____ | Development of Water Conservation Plan                     | \$ _____ |
| m) | _____ | Development of Waste Reduction, Reuse, &/or Recycling Plan | \$ _____ |
| n) | _____ | Evaluation of Sustainability Parameters                    | \$ _____ |
| o) | _____ | Implementation of Community Participation Plan             | \$ _____ |
| p) | _____ | Other (specify) _____                                      | \$ _____ |

<b>TOTAL AMOUNT</b>	<b>\$ _____</b>
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## NADBANK INSTITUTIONAL DEVELOPMENT COOPERATION PROGRAM INFORMATION SHEET



# NORTH AMERICAN DEVELOPMENT BANK

## INSTITUTIONAL DEVELOPMENT COOPERATION PROGRAM

### INFORMATION SHEET

Name of the utility: \_\_\_\_\_

Representative: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ County: \_\_\_\_\_

State: \_\_\_\_\_ Country: \_\_\_\_\_

Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_

Indicate one of the following categories in which the utility should be included.

The utility has:

- ☐ a BECC-certified project and needs institutional strengthening to facilitate financing; or
- ☐ submitted a Step I certification application to BECC and needs institutional strengthening to facilitate certification and financing; or
- ☐ preliminary projects targeted at small, low-income communities and needs institutional strengthening; or
- ☐ a need for assistance in strengthening their institutional capacities, but do not have a specific project; or
- ☐ a need for institutional strengthening in order to enhance privatization efforts.

Briefly describe how the utility fits in the category checked above:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Describe the type of assistance requested:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Estimated cost of assistance: \_\_\_\_\_

## GTN REGISTRATION FORM AND CODES



TIJUANA RIVER ESTUARY

**GTN**

## Global Technology Network Environmental & Energy Technology Opportunities for U.S. Businesses - Register Now

The Economic Growth Center's Office of Business Development introduces the Global Technology Network (GTN). This service focuses on identifying targeted international business opportunities in health, energy and environment, agribusiness, communications and information technologies.

GTN assists U.S. businesses in gaining access to Latin American, Asian, African and other international environmental markets by providing current trade and business leads, and important market

information through the **Environmental Technology Network for Asia and the Americas (ETNA)** and the **U.S.-Africa Technology Network (U.S.-ATN)**.

In partnership with in-country technical representatives, the U.S. Department of Commerce, and other professional groups, GTN works to gather the most current business information concerning infrastructure projects, wastewater treatment systems, and other developments which will have a positive impact on the environment.

The investment opportunities/trade leads are electronically matched with U.S. firms registered in our databases. Trade lead information is then faxed to the appropriate U.S. companies.

Companies must register with  
**GTN/ETNA** to receive  
**environmental technology  
opportunity notices.**

Fill out the registration form  
and fax it to  
(202) 663-2670.

### GTN ENVIRONMENTAL TECHNOLOGY REGISTRATION FORM

**\*\* Please attach a 200 word company description and/or a brochure\*\***

Company:	Contact Name and Title:		
Street Address, City, State, Zip:			
Tel:	Fax:	Email:	
		Internet Access:	Yes      No
<b>Type of Company:</b>	University / Non Governmental Organization / Other Nonprofit:		
<b>(circle)</b>	Manufacturing / Financial / Marketing / Trade / Consulting / Other:		
<b>Number of Employees:</b>	<b>Year Established:</b>	<b>Annual Revenues:</b>	
<b>Regions of Interest (circle):</b>			
Asia/Near East	Sub-Saharan Africa	Latin America/Caribbean	New Independent States      Central & Eastern Europe
Is your company seeking agents/distributors?		Yes	No
Does your company have international experience?		Yes	No
Would your company want to team with others on large projects?		Yes	No
Has your company ever done business with USAID?		Yes	No

#### SPECIFY UP TO 20 ENVIRONMENTAL TECHNOLOGY CODES


## FAX TO (202) 663-2670 OR MAIL TO:

Global Technology Network • G/EG/GTN Room 100, SA-2 • Washington, D.C. 20523-0229

# About the Codes

The registration form allows you to specify up to 20 codes from the taxonomy listing. The coding system was developed to follow nine basic areas in environmental technology.

ETNA currently has over 2,000 U.S. environmental firms registered in the GTN database. These classification codes cover over 500 different sub-sectors within the environment and energy fields.

GTN provides USAID missions, and African, Asian and Latin American public and private sector organizations access to a database that is able to match U.S. technology with a specific developing country's environmental requirement.

The following is a breakdown of the types of Finns in the GTN database by major environmental sectors:

- Water Pollution Equipment
- Environmental Management
- Solid Waste Equipment
- Water Pollution Management
- Solid Waste Management
- Air Pollution
- Pollution Prevention/Clean Tech.
- Air Pollution Management
- Energy

<b>A</b>	<b>AIR POLLUTION</b>				
<b>AM</b>	<b>Management Services</b>				
AM01.00	Air Control Regulations & Policy Development	AA05.00	<u>Specialty Gases</u>	AT04.03	Solvent Concentration (Adsorption)
AM02.00	Air Permitting	AA05.01	Calibration Gases	AT04.04	Thermal Oxidation
AM03.00	Air Pollution Management Training	AA05.02	Gas Generation Equipment	<u>AT05.00</u>	<u>Combustible Gas Controls</u>
AM04.00	Air Pollution Modeling	AA06.00	Other (please specify)	AT05.01	Flares
AM05.00	Asbestos Abatement	<b>AC</b>	<b>Collection Systems</b>	<u>AT06.00</u>	<u>Particulate Controls</u>
AM06.00	Emissions Monitoring/Characterization	AC01.00	Active Collection Systems-Landfills (Extraction Wells)	AT06.01	Electrostatic Precipitators
AM07.00	Emissions Trading	AC02.00	Passive Gas Collection-Landfills (Vents)	AT06.02	Fabric Filters (Baghouses)
AM08.00	Facility Pollution Management	AC03.00	Other (please specify)	AT06.03	Mechanical Collectors/Cyclones
AM09.00	Indoor Air Pollution Analysis	<b>AT</b>	<b>Treatment Systems</b>	AT06.04	Venturi Scrubbers
AM10.00	Indoor Air Pollution Control	<u>AT01.00</u>	<u>Acid Gas/SOx Controls</u>	<u>AT07.00</u>	<u>Fume/Mist/Ambient Air Controls</u>
AM11.00	Laboratory Services	AT01.01	Dry Reagent Injection	AT07.01	CFC Replacement Control Systems
AM12.00	Noise Analysis & Abatement	AT01.02	Spray Drying Flue Gas Desulfurization	AT07.02	Air Duct Cleaning
AM13.00	Radon Assessment Measures & Control	AT01.03	Wet Flue Gas Desulfurization	AT07.03	Fume Hoods/Spray Booths
AM14.00	Monitoring/Testing for Clean Room Facilities	<u>AT02.00</u>	<u>NOx Controls</u>	AT07.04	Indoor Air Filter Systems
AM15.00	Clean Room Design/Build (Facilities above Class 10)	AT02.01	Flue Gas Recirculation	AT07.05	Mist Collectors
AM16.00	Clean Room Design/Build (Facilities Class 10 & below)	AT02.02	Low-NOx Burners	AT07.06	Odor Control Chemicals
AM17.00	Other (please specify)	AT02.03	Non-Selective Catalytic Reduction	AT07.07	Odor Control Equipment (Scrubbers)
<b>AA</b>	<b>Analytical/Monitoring Instruments</b>	AT02.04	Selective Catalytic Reduction	AT07.08	Wet Scrubbers
AA01.00	Analyzers	AT02.05	Selective Non-Catalytic Reduction	<u>AT08.00</u>	<u>Mobile Source Controls</u>
AA02.00	Detectors (Gas)	<u>AT03.00</u>	<u>Combined SOx NOx Controls</u>	AT08.01	Alternative Fuel Vehicles
AA03.00	Monitors	AT03.01	In-Furnace	AT08.02	Catalytic Converters
AA04.00	Samplers	AT03.02	Post-Combustion	AT08.03	Diesel Particulate Filter Controls
		AT03.03	Slagging Combusters	AT08.04	Electric Vehicles
		<u>AT04.00</u>	<u>VOC Controls</u>	AT08.05	Evaporative Emission Controls
		AT04.01	Biofiltration	AT08.06	Fuel Additives
		AT04.02	Catalytic Oxidation	AT08.07	Vehicle Emission Monitoring
				AT09.00	Emergency Release Controls & Containment
				AT 10.00	Noise Abatement Equipment
				<u>AT 10.00</u>	<u>Clean Room Products</u>



## GTN - Environmental Technology Codes

AT11.01	Garments/Accessories/Supplies	SC01.06	Native Soil	SH03.07	Railroads
AT11.02	Ultrapure Air Filters - HEPA/ULPA	SC01.07	Sprayed Asphalt	SH03.08	Transfer Station Systems & Equipment
AT12.00	Other (please specify)	SC01.08	Synthetic Membranes	SH03.09	Trucks
<b>S</b>	<b>SOIL/SOLID WASTE POLLUTION</b>	SC02.00	<u>Vertical Barriers</u>	SH03.10	Health & Safety Equipment
		SC02.01	Cement-Bentonite Slurry Wall	SH03.11	Street Cleaning Equipment/Vehicles
		SC02.02	Ground Freezing		
		SC02.03	Grout Curtains	SH04.00	Other (please specify)
		SC02.04	Injection-Permeability Agent	<b>ST</b>	<b>Treatment Systems</b>
<b>SM</b>	<b>Management Services</b>	SC02.05	Sheet Piling	<u>ST01.00</u>	<u>Spill/Hazardous Waste Remediation</u>
SM01.00	Combustion/Incineration Systems Design	SC02.06	Soils Slurry Wall	ST01.01	Bioremediation Products
SM02.00	Contaminated Site Cleanup	SC02.07	Vibrating Beam	ST01.02	Sorbents/Polymers
SM03.00	Emergency Response Services	SC03.00	<u>Horizontal Barriers</u>	ST01.03	Other Products & Equipment
SM04.00	Hazardous Waste Management	SC03.01	Ground Freezing	<u>ST02.00</u>	<u>In-Situ Soil Treatment Technologies</u>
SM05.00	Hospital/Pathological Waste Management	SC03.02	Grout Injection	ST02.01	Bioremediation
SM06.00	Industrial Waste Recycling/Recovery	SC03.03	Injection-Permeability Agent	ST02.02	Bioventing
SM07.00	Laboratory Services	SC04.00	<u>Surface Controls</u>	ST02.03	Solidification/Stabilization
SM08.00	Landfill Design/Management	SC04.01	Daily Cover	ST02.04	Soil Flushing
SM09.00	Municipal Refuse Management	SC04.02	Dikes & Berms	ST02.05	Soil Vapor Extraction (SVE)
SM10.00	On-site Construction Services	SC04.03	Diversion of Collection Systems	ST02.06	Vitrification
SM11.00	Post Consumer Product Recycling	SC04.04	Dust Controls	<u>ST03.00</u>	<u>Ex-Situ Treatment Technologies</u>
SM12.00	Site Inspection	SC04.05	Grading	ST03.01	Air Stripping
SM13.00	Solid Waste Management Training	SC04.06	Revegetation	ST03.02	Chemical Leaching/Metals Extraction
SM14.00	Solid Waste Regulations & Policy Development	SC04.07	Sediment Controls	ST03.03	Dechlorination
SM15.00	Testing--Toxic Substances	SC04.08	Soil Stabilization	ST03.04	Neutralization
SM16.00	Waste-to-Energy Plant Design	SC04.09	Surface Seals	ST03.05	Other Chemical Modification
SM17.00	Other (please specify)	SC05.00	Other (please specify)	ST03.06	Oxidation
<b>SA</b>	<b>Analytical/Monitoring Instruments</b>	<b>SH</b>	<b>Handling/Control Systems</b>	ST03.07	Reduction
		<u>SH01.00</u>	<u>Field Services</u>	ST03.08	Soil Washing
SA01.00	Toxicology (GC/MS)	SH01.01	Drum & Debris Removal	ST03.09	Solvent Extraction
SA02.00	UST/AST Leak Detectors	SH01.02	Excavation of Soils/Solids	ST03.10	UV/Photolysis
SA03.00	Other (please specify)	SH01.03	Excavation of Semi-Solids (Non-Pumpable)	ST03.11	Bioremediation
		SH01.04	Materials Handling Equipment	ST03.12	Thermal Desorption
		SH01.05	Heavy Equipment	<u>ST04.00</u>	<u>Solidification, Fixation &amp; Stabilization</u>
		SH02.00	Solids Processing	ST04.01	Lime-Flyash
		SH02.01	Baling/Compacting	ST04.02	Portland Cement
		SH02.02	Classification/Sorting	ST05.00	Sorption
		SH02.03	Crushing/Grinding/Shredding	ST05.01	Alumina
		SH02.04	Drying	ST05.02	Carbon
		SH02.05	Magnetic Processes	ST05.03	Flyash
		SH02.06	Restaurant/Food Waste Grinding & Pulping	ST05.04	Kiln Dust
<b>SC</b>	<b>Containment Technologies</b>	SH02.07	Screening	ST05.05	Lime
<u>SC01.00</u>	<u>Capping &amp; Lining</u>	<u>SH03.00</u>	<u>Transportation &amp; Storage</u>	ST05.06	Zeolites
SC01.01	Asphalting Concrete	SH03.01	Barges	<u>ST06.00</u>	<u>Encapsulation</u>
SC01.02	Chemical Sealants/Stabilizers	SH03.02	Bins	ST06.01	Asphalt
SC01.03	Clay	SH03.03	Bulk Tanks	ST06.02	Proprietary Agents
SC01.04	Concrete	SH03.04	Drums	ST06.03	Thermoplastics
SC01.05	Multi-Layered Cap	SH03.05	Emergency Response		
		SH03.06	Fabric Bags		

## GTN - Environmental Technology Codes

ST07.00	<u>Landfilling</u>	<b>W</b>	<b>WATER &amp; WASTEWATER POLLUTION</b>	WC01.04	Well Points
ST07.01	Hazardous Waste			WC01.05	Groundwater Pump & Treatment Systems
ST07.02	Medical Waste				
ST07.03	Municipal & Non-Hazardous	<b>WM</b>	<b>Management Services</b>	WC01.06	Landfill Leachate Collection Treatment Systems
ST08.00	Composting Techniques	WM01.00	Aquaculture Wastewater Management	WC01.07	In-Situ Groundwater Treatment
ST09.00	Landfarming Techniques			<u>WC02.00</u>	<u>Bulk Liquid Handling</u>
ST10.00	<u>Thermal Technologies/Industrial Waste</u>	WM02.00	Coastal Resource Protection & Planning	WC02.01	Gravity/Siphon
ST10.01	Cement Kilns	WM03.00	Ecological Restoration of Streams & Wetlands	WC02.02	Industrial Vacuum
ST10.02	Liquid Injection Incinerators			WC02.03	Irrigation Equipment
ST10.03	Rotary Kiln Incinerators	WM04.00	Effluent Sampling/Monitoring Services	WC02.04	Pumps
ST11.00	<u>Thermal Technologies/Municipal-Hospital Waste</u>	WM05.00	Emergency Response Planning/Services	WC02.05	Weirs
ST11.01	Fluidized Bed Combusters			<u>WC03.00</u>	<u>Liquid Storage</u>
ST11.02	Mass Burn Incinerators	WM06.00	Groundwater Sampling/Monitoring Services	WC03.01	Aboveground Tanks
ST11.03	Modular-Type Incinerators			WC03.02	Bulk Tanks
ST11.04	Multiple Hearth Incinerators	WM07.00	Laboratory Services	WC03.03	Drums
ST11.05	Pyrolysis/Controlled Air Combustion Incinerators	WM08.00	Lake & Marine Management	WC03.04	Secondary Containment
		WM09.00	Toxicology Studies	WC03.05	Underground Tanks
ST11.06	Refuse-Derived Fuel	WM10.00	Water Pollution Management Training	<u>WC04.00</u>	<u>Transportation</u>
ST11.07	Ship Based Incineration			WC04.01	Tanker Truck
ST11.08	Microwaving	WM11.00	Water Regulations & Policy Development	WC04.02	Railroad
ST11.09	Autoclaving			WC04.03	Pipeline
ST11.10	Waste-to-Energy Technology	<u>WM12.00</u>	<u>Potable Water Systems</u>	<u>WC05.00</u>	<u>Sewer Systems</u>
ST12.00	<u>Bioreclamation</u>	WM12.01	Water Purification Plant Design/Construction	WC05.01	Sewer System Construction
ST12.01	Bacteria Augmentation			WC05.02	Sewer Cleaning & Tunneling
ST12.02	Natural	WM12.02	Water Distribution Systems Design/Construction	WC05.03	Portable Sanitary Products/Collection
ST13.00	<u>Recycling Technologies</u>	<u>WM13.00</u>	<u>Wastewater Systems</u>	WC06.00	Other (please specify)
ST13.01	Aluminum			<b>WT</b>	<b>Treatment Systems</b>
ST13.02	Collection/Sorting/ Processing Equipment	WM13.01	Wastewater Treatment Plant Design/Construction	<u>WT01.00</u>	<u>Water Purification (Potable &amp; Industrial)</u>
ST13.03	Discarded Electronics/ Appliances	WM13.02	Wastewater Collection Systems Design/Construction	WT01.01	Activated Carbon Filters
ST13.04	Glass	WM14.00	Stormwater Management	WT01.02	Chemical Coagulation/ (Flocculation Color-Turbidity)
ST13.05	Lead Battery	WM15.00	Hydrology Services		
ST13.06	Iron, Steel, Metals	WM16.00	Other (please specify)	WT01.03	Continuous De-Ionization
ST13.07	Paper			WT01.04	Desalination
ST13.08	Plastic	<b>WA</b>	<b>Analytical/Monitoring Instruments</b>	WT01.05	Distillation
ST13.09	Products from Recycled Materials	WA01.00	Analyzers	WT01.06	Electrodialysis
		WA02.00	Flowmeters	WT01.07	Ion-Exchange
ST13.10	Rubber/Tires	WA03.00	Samplers	WT01.08	Multi-Media Filters
ST13.11	Construction/Demolition Debris	WA04.00	Water Quality Monitors	WT01.09	Other Filtration Methods
		WA05.00	pH Meters	WT01.10	Reverse Osmosis
ST14.00	<u>Recycled Waste Brokers</u>	WA06.00	Conductivity Meters	WT01.11	Sand/Coarse Media Filters
ST14.01	Aluminum	WA07.00	Marine Spill Detection Monitoring Equipment	WT01.12	Ultra-Filtration (for Manufacturing Processes)
ST14.02	Paper			WT01.13	Water Conditioning
ST14.03	Plastic	WA08.00	Other (please specify)	<u>WT02.00</u>	<u>Innovative Wastewater Treatment Systems</u>
ST14.04	Steel			WT02.01	Integrated Pond Systems
ST14.05	Nonferrous Materials	<b>WC</b>	<b>Collection/Control Systems</b>	WT02.02	Package Treatment
ST14.06	Reagents (Solvents, Acids)	<u>WC01.00</u>	<u>Groundwater Collection/Extraction</u>		
ST14.07	Recycled Oil				
ST15.00	Other (please specify)	WC01.01	Ejector Jet Pumps		
		WC01.02	French Drains		
		WC01.03	Pipe & Media Drains		

## GTN - Environmental Technology Codes

WT02.03	Sequential Batch Reactors (Single Tank)	WT11.01	Air Stripping	EM01.16	TQM/TQEM
<u>WT03.00</u>	<u>Wastewater Treatment</u>	WT11.02	Chlorine Oxidation	EM01.17	Software Development
WT03.01	Air/Gas Flotation-Induced, Dissolved, Electrolytic	WT11.03	Electrochemical	<u>EM02.00</u>	<u>ISO 14000</u>
WT03.02	Comminutors	WT11.04	Ion Exchange	EM02.01	Auditing
WT03.03	Grit Chambers	WT11.05	Irradiation	EM02.02	Certification
WT03.04	Oil-Grease/Water Separation (Skimmers)	WT11.06	Metals Treatment	EM02.03	Management Systems Design
WT03.05	Screens/Bar Racks	WT11.07	Neutralization (pH)	EM02.04	Training
WT03.06	Sedimentation Tanks	WT11.08	Other Chemical Treatment	<u>EM03.00</u>	<u>ISO 9000</u>
WT03.07	Mechanical Flocculators	WT11.09	Photolysis	EM03.01	Auditing
<u>WT04.00</u>	<u>Wastewater Treatment-Secondary (Biological Treatment)</u>	WT11.10	Precipitation	EM03.02	Certification
WT04.01	Aerators	WT11.11	Reducing Agents	EM03.03	Life Cycle Assessments
WT04.02	Activated Sludge Processes	WT11.12	Steam Stripping	EM03.04	Training
WT04.03	Rotating Biological Contractors	WT11.13	Wet Air Oxidation		
WT04.04	Secondary Clarifiers	<u>WT12.00</u>	<u>Liquid Waste &amp; Wastewater Recycling</u>	<b>EE</b>	<b>Energy Efficient Systems &amp; Eco-Products</b>
WT04.05	Trickling Filters	WT12.01	Acid Waste Regeneration	<u>EM01.00</u>	<u>HVAC/Refrigeration</u>
<u>WT05.00</u>	<u>Wastewater Treatment-Disinfection</u>	WT12.02	Electrowinning	EM01.01	Air Conditioners/Heat Pumps/Dehumidifiers
WT05.01	Chlorination	WT 12.03	Solvent Recovery	EM01.02	Boilers/Heating Systems
WT05.02	Ozonation	WT12.04	Used Oil Recycling	EM01.03	Chillers/Thermal Energy Storage Systems
WT05.03	UV Disinfection	<u>WT13.00</u>	<u>Marine Spill Control</u>	EM01.04	Compressors/Blowers/Fans
<u>WT06.00</u>	<u>Wastewater Treatment-Tertiary (Advanced)</u>	WT13.01	Bioremediation Products	EM01.05	Efficient Wood/Kerosene/Gas/Solar Stoves
WT06.01	Activated Carbon Filters	WT13.02	Containment Booms	EM01.06	Refrigeration Systems/Freezers/Ice Makers
WT06.02	Biological Treatment	WT13.03	Oil Recovery Barges	EM01.07	Space Heaters
WT06.03	Chemical Treatment	WT13.04	Oil Skimmers	EM01.08	Timers/Sensors/Controls
WT06.04	Multi-Media Filters	WT13.05	Sorbents/Polymers	EM01.09	Water Heaters
WT06.05	Nitrogen Removal	WT14.00	Other (please specify)	EM01.10	Clean Room HVAC Systems
WT06.06	Phosphorous Removal	<b>E</b>	<b>ENVIRONMENTAL MANAGEMENT &amp; ENERGY SYSTEMS</b>	<u>EM02.00</u>	<u>Process Controls</u>
WT06.07	Polishing Ponds (Constructed Wetlands)	<b>EM</b>	<b>Environmental Management</b>	EM02.01	Electrical Metering Equipment
<u>WT07.00</u>	<u>Wastewater Sludge-Treatment/Management</u>	<u>EM01.00</u>	<u>Environmental Management</u>	EM02.02	Energy Management Systems
WT07.01	Sludge Pumps	EM01.01	Consulting & Engineering	EM02.03	Gas Metering Equipment
<u>WT08.00</u>	<u>Sludge Stabilization</u>	EM01.02	Ecosystem Assessments	EM02.04	Other Process Controls
WT08.01	Aerobic/Anaerobic Digesters	EM01.03	Ecotourism	<u>EM03.00</u>	<u>Industrial Power</u>
<u>WT09.00</u>	<u>Sludge Dewatering</u>	EM01.04	Emergency Response Services (Fire, Explosion)	EM03.01	Efficient Boiler Technologies
WT09.01	Belt Filter Presses	EM01.05	Engineering/Construction	EM03.02	Process Heat Recovery
WT09.02	Centrifuges	EM01.06	Environmental Compliance	EM03.03	Cogeneration
WT09.03	Dewatering & Drying Beds	EM01.07	Environmental Impact/Risk Assessment	<u>EM04.00</u>	<u>Insulation &amp; Building Materials</u>
WT09.04	Gravity Thickening (Thickeners)	EM01.08	Environmental Policy Development	EM04.01	Corrosion Protection
WT09.05	Pressure Filters	EM01.09	Environmental Training	EM04.02	Insulation
WT09.06	Thermal Dryers	EM01.10	GIS & GPS Systems	EM04.03	Other Energy-Efficient Building Materials
WT09.07	Vacuum Filtration	EM01.11	Health & Safety Policy & Procedures	EM04.04	Recycled Building Materials
<u>WT10.00</u>	<u>Sludge Disposal</u>	EM01.12	Permitting/Licensing	EM04.05	Sealants
WT10.01	Land Application	EM01.13	Construction Site/Project Management	EM04.06	Clean Room Building Materials
WT10.02	Landfill	EM01.14	Project Financing		
<u>WT11.00</u>	<u>Liquid Waste Treatment</u>	EM01.15	Toxicological Assessments		

## GTN - Environmental Technology Codes

<u>EE05.00</u>	<u>Lighting</u>
EE05.01	Commercial Fixtures
EE05.02	Fluorescent Lamps/CFLs
EE05.03	Electronic Ballasts
EE05.04	Controls/Timers/Sensors
EE05.05	High-Intensity Discharge Lamps
EE05.06	Outdoor/Industrial Fixtures
EE05.07	Photovoltaic-Assisted
EE05.08	Residential Fixtures
<u>EE06.00</u>	<u>Motors &amp; Motor-Driven Equipment</u>
EE06.01	Electronic Adjustable Speed Drives (ASDs)
EE06.02	Fractional Horsepower (<1hp) Motors
EE06.03	Integral Horsepower (>1hp) Motors
<u>EE07.00</u>	<u>Office Equipment</u>
EE07.01	Computers
EE07.02	Other Equipment
<u>EE08.00</u>	<u>Window Systems/Glazing</u>
EE08.01	Adhesives, Films, Coatings & Glazings
EE08.02	Coated/Low-Emissivity Flat Glass
EE08.03	Low-Emissivity Units/ Sashes
<u>EE09.00</u>	<u>Eco-Products</u>
EE09.01	Environmentally Friendly Products-Consumer/Retail
EE09.02	Environmentally Friendly Products-Commercial/Industrial
EE10.00	Other (please specify)

### **R RENEWABLE TECHNOLOGIES**

#### **RE Renewable Energy Technologies**

<u>RE01.01</u>	<u>Biomass Conversion</u>
RE01.02	Combustion
RE01.03	Gasification
RE01.04	Landfill Gas Systems
RE01.05	Anaerobic Digestion
RE01.06	Fermentation
<u>RE02.01</u>	<u>Geothermal</u>
RE02.02	Power Generation
RE02.03	Direct Heat Applications
RE02.04	Heat Pumps
<u>RE03.01</u>	<u>Fuel Additives</u>
<u>RE04.01</u>	<u>Fuel Cells</u>

<u>RE05.01</u>	<u>Hydroelectric</u>
RE05.02	Micro scale (<250 kW)
RE05.03	Small scale (< 10 MW)
RE05.04	Large scale (> 10 MW)
<u>RE06.01</u>	<u>Hydrogen</u>
<u>RE07.01</u>	<u>Solar</u>
RE07.02	Photovoltaic Cells/Panels
RE07.03	Photovoltaic Power Generation
RE07.04	Parabolic Troughs, Dishes & Receivers
RE07.05	Solar Collection Panels

RE07.06	Passive Heating Materials
RE07.07	Solar Water Heating
RE07.08	Climate-Sensitive Architecture & Design/Daylighting
<u>RE08.01</u>	<u>Ocean/Tidal/Wave Power</u>
RE08.02	Tidal/Wave Power Systems
RE08.03	Ocean Thermal Power
<u>RE09.01</u>	<u>Wind Power</u>
RE09.02	Power Generation Turbines
RE09.03	Water Pumping Systems

### **P POLLUTION PREVENTION**

If you are registering a company that specializes in pollution prevention technologies, you must select not only an industry category, but also all applicable subcategories.

For example, a clean technology firm that manufactures water-based paint would select PP10.08 because it specializes in material substitution. If this company is interested in receiving general trade leads for the painting & coating industry category, it would also select PP10.00.

<b>PP</b>	<b>Pollution Prevention Industry Categories:</b>	<b>PP</b>	<b>Pollution Prevention Sub-categories:</b>
P01. __	Automotive	___.00	Clean Technology Pollution Prevention Development
PP02. __	Cement	___.01	Inventory Control
PP03. __	Chemicals	___.02	Cost Analysis/Life Cycle Analysis
PP04. __	Electronics	___.03	Housekeeping/Operating Practices
PP05. __	Food and Beverage	___.04	Recycling/Re-use Technologies
PP06. __	Hospital	___.05	Process/Product Design (New facilities)
PP07. __	Iron & Steel	___.06	Process Modification (Existing facilities)
PP08. __	Lumber & Wood	___.07	Equipment Retrofication
PP09. __	Metal Finishing & Electroplating	___.08	Material Substitution
PP10. __	Painting & Coating		
PP11. __	Palm Oil Plantations & Refineries		
PP12. __	Pesticides		
PP13. __	Petroleum Refining		
PP14. __	Pharmaceuticals		
PP15. __	Plastics		
PP16. __	Pulp & Paper		
PP17. __	Rubber		
PP18. __	Semiconductors		
PP19. __	Sugar		
PP20. __	Tanneries		
PP21. __	Textiles		
PP22. __	Agro-Crop		
PP23. __	Agro-Livestock		
PP24. __	Other (please specify)		

## ALTERNATE FINANCING SOURCES



# ARGENTA CAPITAL ENTERPRISES, L.L.C.

*International Infrastructure Finance*

FOR FURTHER INFORMATION  
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Scott A. Baldrige, *President*

ARGENTA CAPITAL ENTERPRISES  
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## New Infrastructure Funding Source – Mexican Capital Markets

### INFRASTRUCTURE NEED

Mexico faces staggering investment needs in infrastructure, especially if the goals engendered by the North American Free Trade Agreement are to be fulfilled. It is estimated that at the national level alone, the Mexican federal government needs to invest \$34 billion between now and the year 2015 for large-scale national and high profile infrastructure projects. When taking state and municipal infrastructure needs into account, this investment need would be well over \$100 billion.

Mexico has experienced rapid urban growth that has led to an increase in the requirements for basic urban services. Demographic studies indicate that by the year 2000 the population of Mexico will reach 100 million with more than 60% concentrated in urban areas. The pressure on state and municipal governments to provide basic services will grow as the demands made on them grow, especially as the developing policy of decentralization gives local government more responsibility and accountability. However, 15 million Mexican households are currently without running water and 30 million lack access to sewer systems. A recent U.S. Department of Commerce Office of Technology Exports study estimates that, along the border alone, \$4 billion is needed to complete and expand water and other environmental projects while an additional \$3 billion is required for new wastewater collection and treatment systems. Every day the country's cities generate 90,000 tons of solid waste, of which, only 62,000 tons are collected and 15,000 tons are deposited in recognized landfills. There is 8 million tons of industrial waste generated each year, and only 20% are treated in permitted facilities. The excess is illegally deposited in rivers, sewers and clandestine sites. Other basic municipal services, such as local roads and bridges, low income housing, schools, public markets and street lighting also need improvements as cities grow.

### TRADITIONAL FUNDING SOURCES

Historically, most municipal water districts in Mexico (as well as in the U.S. during the 1970's) built their water and wastewater systems using federal aid or subsidized credit. In Mexico, from 1986 to 1991, subsidized loans and grants provided 85% of the capital investment for local water districts, or *organismos de agua*. Local water authorities, through user fees, provided only 8% of this investment, while the remainder came from Mexican and multilateral development bank credits.

Burdened by debt, the governments of Latin America, including Mexico, have aggressively turned away from official borrowing, and have moved toward privatization or concession contracts to finance infrastructure. The general belief is that the private sector can provide a more efficient model for infrastructure development. In practice, however, private sector financing has fallen short of expectations.

Many concessions were awarded to private developers to build, own and operate wastewater treatment plants. Most of these projects failed because the ultimate payment source for the concession was the user fees collected at the local level. Only a few of the more than 30 concessions granted by local *organismos* in the past eighteen months have obtained financing.

Since concessions depend on payments from the municipality, their ability to attract debt is largely a function of the creditworthiness of the local government entity and their ability to access a well-informed investor base. However, municipalities and water districts are often not creditworthy due to historical budget deficits, their poor track record in collecting user fees, and outdated water systems that cause as much as 70% water leakage.



Another problem endemic to Mexico is the unavailability of long-term funds. Potable water plants, water distribution networks, and wastewater treatment plants need to be financed on a long-term basis. Traditional funding sources for Mexican projects limit the amortization of the construction and development costs from five to seven years. This places an undue financial burden on the current users of these public facilities whose assets have a useful life of 30 years. More recent funding sources have come from international institutional investors, yet this raises questions concerning currency and convertibility risks, as well as constitutional restrictions to foreign exchange exposure.

In the U.S., local governments access trillions of dollars for their projects through the issuance of tax-exempt municipal bonds. But for Mexico, the basic question remains; where will the billions of dollars for basic municipal infrastructure come from?

#### **FUNDING SOLUTION**

The obvious solution is to identify investors with long-term liabilities that require sound long-term assets. These investors should be well informed of the workings of the local institution and have confidence in their long-term viability. Such an investor base now exists in Mexico.

On July 1, 1997, the Mexican social security system was privatized. In a private pension plan a worker's contributions are held in an individual account which is invested by a private fund administrator. In Mexico these funds are the *Afores* (covering retirement pensions) or the insurance company annuity funds (covering workmen's compensation and death or disability payments). Workers will be able to select membership in various competing *Afores*, or insurance company annuity funds, and the fund managers will be looking to invest these contributions in investment instruments bearing the best rates of returns for its members.

This has immediate implications for infrastructure finance in Mexico. Within one year of operation, the *Afores* will have over \$4 billion under management that they must invest, with the annuity funds having an additional portfolio of \$1 billion. These funds will increase by over \$5 billion each year as new workers enter the system. By the year 2005, the Mexican portfolio managers of the new pension and annuity funds will have over \$40 billion to invest in Mexico. Private portfolio managers, not government bureaucrats, will invest this internal savings pool. One of the regulatory conditions for investment is that the securities undergo an independent credit rating. Therefore, there will be a growing appetite for investment-grade, long-term securities.

#### **ACCESSING THE DOMESTIC CAPITAL MARKET**

How does this effect water authorities? Water authorities have a readily identifiable source of income: the cash flows generated by the collection of water and sewer fees from customers in their region, both residential and industrial. These agencies can be evaluated by lenders just like any business enterprise, and their ability to incur debt can be quantified. Those water authorities that can demonstrate borrowing capacity should be able to borrow from Mexican institutional investors just like any public or private entity anywhere in the world.

Water agencies are the best candidates for accessing this newly developing capital market. Investors feel comfortable with municipal water project debt, due to water being essential. Private companies come and go, but municipal governments will always exist, and they will always have to provide basic services like water to their populations. What is essential is to develop and portray the water authority as a strong and viable institution. Emphasis should be placed on identifying the current state of affairs, and putting forth a plan to strengthen the institution.

A major effort of institutional strengthening of water districts is underway. World Bank technical assistance funds, funneled through the National Water Commission and the federal development bank, Banobras, are bringing state-of-the-art planning and engineering to local governments. Engineers and administrators are increasingly able to design and operate modern facilities. The new Federal Water Law provides economic incentives for rapidly upgrading water and wastewater systems. By the year 2000, all municipalities with populations over 50,000 must meet strict wastewater discharge standards or face discharge fees calculated to be twice the cost of building and operating a wastewater treatment plant.

An advantage to accessing the domestic capital markets is accountability to institutional investors. This accountability encourages an integrated planning and development approach to water system management and facilities construction. It is not advisable to develop discreet, stand-alone projects like wastewater treatment plants without looking at the overall needs and capacity of the entire water district. Wastewater treatment by itself does not generate revenues; water sales generate revenues. The plant must be developed within the context of also providing potable water distribution, its ability to cut water leakage and other wastes within the network, and the capacity to collect water fees on a rational, metered basis. All functions of a water authority should act as a cohesive enterprise.

Investors know that a systematic management approach will provide the basis for the water district to be able to repay its debts over a long-term period. It is prudent to invest a few million dollars to address leaks and to computerize the billing and collection of fees, before spending \$30 million on a wastewater treatment plant. A small investment could immediately and significantly increase revenues, and thereby provide the foundation to support debt for the larger projects.

In the context of a Mexican water authority, the systematic analysis of the institution will take the following criteria under review:

- 1) Annual water loss, and a cost/benefit analysis of its repair.
- 2) Annual operations running at a surplus.
- 3) Analysis of the rate setting policies in real terms.
- 4) Historical review of fee collection and the remedies for non-collection.
- 5) Political autonomy of the water authority.
- 6) Analysis of industrial/residential customer base, with a projection of regional growth.
- 7) Cohesive long-term capital investment plan.
- 8) Independent credit review.

These key points are important because their implementation demonstrates a sound institution with the prospects of healthy future cash flows.

What is the status of financing for water systems in Mexico? As recently as a year ago, it was thought that the only financing resource available were the international capital markets. While this remains a capital source, something new has occurred in Mexico. There is now a giant pool of money being created that could be used to purchase rated water district bonds. Pension privatization creates a new domestic peso capital market for long-term infrastructure debt that never existed in Mexico before. Institutional strengthening and creditworthiness immediately take on a new urgency. Water authorities can now connect improvements and sound credit ratings with a growing domestic capital pool to finance their expansion and wastewater treatment.

The Mexican cities of Leon or Monterrey have existed for centuries and will exist for centuries more. They have and will continue to provide water services. Investors know that one way or another, they will always find the resources to bring water to their citizens. Therefore, if they can show they are financially sound, they represent a good bet for private investment. It is an investment in Mexico.





# Argenta Capital Enterprises, L.L.C.

*INTERNATIONAL INFRASTRUCTURE FINANCE*

## Corporate Profile

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MEXICO CITY

NEW YORK

ORANGE COUNTY, CA.

## ARGENTA CAPITAL ENTERPRISES LIST OF SERVICES

Argenta Capital Enterprises provides financial services to US and Mexican local, federal and corporate clients involved in infrastructure development. Argenta's principals have over eight years of experience, development and contractual work in the public finance market in the United States and Mexico.

Argenta specializes in projects ranging from \$1 million to \$75 million in the areas of water/wastewater, energy, industrial development and housing. Argenta's services are organized into the following special groups:

### PROJECT FINANCE GROUP

Arranges debt and equity financing for infrastructure development projects.

- Structuring and placement of long term dollar and peso denominated debt
- Refinancing of tax-exempt or taxable municipal debt
- Project finance for government concession projects
- Procurement of project equity financing
- Project finance for state and municipal water, wastewater treatment, energy and housing projects

### FINANCIAL ADVISORY SERVICES GROUP

Advises municipal clients on institutional strengthening and public policy matters, and provides advisory services to private companies with infrastructure related projects.

- Analysis of municipal and state debt capacity
- Assistance in restructuring of current debt
- Assistance with credit rating process
- Institutional strengthening studies, and development of implementation programs
- Government policy studies
- Assistance in negotiating optimal terms for concession projects

### MERGERS & ACQUISITIONS GROUP

Assists private Mexican and international infrastructure companies in obtaining equity funds in order to expand their business base.

- Joint venture arrangements with domestic and international partners
- Assistance with technology transfer agreements
- Identification of corporate acquisition targets
- Equity placement for corporate growth
- Business plan development

## RECENT PROJECTS IN MEXICO

The following is a selection of recent Argenta projects performed in Mexico:

- **Bi-national Project Finance Program**

Performed preliminary legal and financial research on the ability of Mexican local and state agencies to access the US tax-exempt municipal market for bi-national projects. The impact to this innovative program is significant, in that qualified projects are able to access the multi-trillion dollar US municipal capital market. The US municipal market offers 30 year financing at fixed interest rates currently ranging from 5% to 8%.

- **Mexican Water Authority Credit Rating**

Assisted CESPT, the water authority of Tijuana, Baja California, in obtaining a shadow credit rating from Standard & Poor's. The project included an extensive analysis of the organizational structure of the water authority, including state and federal legal issues, rate setting policies, billing and collection issues, and a review of the water authority's five year capital program. This credit rating can assist CESPT in obtaining 20-year, peso-based financing, at reasonable fixed interest rates to refinance existing debt or for future projects.

- **Pemex Off-Balance Sheet Water Treatment Project**

Acted as structuring agent for a wastewater treatment facility bid out as a Build, Own, Operate, and Transfer project to be integrated into a Pemex refinery. The project involved a 12-year, dollar linked financing, with the only collateral being a service rendering agreement from Pemex Refinacion. The transaction obtained an investment grade credit rating of BBB- from Standard & Poor's.

- **Banobras Long Term Financing Program**

Working with the federal development bank, Banobras, to develop 20-year, peso based financing mechanisms for state and local government infrastructure projects. The work entails evaluating Mexican institutional investor needs, determining the regulatory environment, and developing the structural framework to arrive at a sound credit, and marketable debt instrument.

- **CNA 1997 Water Law Research**

Completed a study of the impact on the Mexican water industry due to the changes of the federal water regulations implemented in July of 1997. The study involved several meetings with various departments of the federal water commission, CNA, to analyze the breakdown of the fines, surcharges, and incentives for water discharge according to region and water receptor mass.

## PREVIOUS UNDERWRITTEN TRANSACTIONS

CLIENT	PROJECT	AMOUNT
San Francisco Redevelopment Agency	Residential Mortgage Revenue Bonds-Opera Plaza	40,000,000
Retama Development Corporation	Retama Racetrack Senior Refunding Bonds	7,000,000
Retama Development Corporation	Retama Racetrack Subordinate Refunding Bonds	82,000,000
Ontario Redevelopment Agency	Taxable Collateralized Mortgage Obligation Bonds	3,520,000
City of Rancho Cucamonga	Mortgage Asset Liquidation	6,467,000
City of Palmdale	Taxable Collateralized Mortgage Obligation Bonds	5,976,000
Oceanside-San Buenaventura Housing Agency	Taxable Collateralized Mortgage Obligation Bonds	4,436,000
Oceanside-San Buenaventura Housing Agency	Subordinate Taxable Collateralized Mortgage Obligation Bonds	509,000
Pico Rivera Redevelopment Agency	Mortgage Asset Liquidation	43,400,000
Paramount Redevelopment Agency	Mortgage Asset Liquidation	26,260,000
City of Palmdale	Mortgage Asset Liquidation	19,209,000
City of Palmdale	Mortgage Asset Liquidation	10,680,00
City of Palmdale	Mortgage Asset Liquidation	10,000,000
New Castle, Delaware	Mortgage Asset Liquidation	10,000,000
City of Palmdale	Mortgage Asset Liquidation	3,088,000
City of Palmdale	Taxable Special Obligation Bonds	51,000,000
Cities of Aurora & Naperville, Illinois	FNMA Collateralized Mortgage Obligation Bonds	27,500,000
Lancaster-Grand Terrace- Housing Authority	Taxable Special Obligation Bonds	9,550,000
City of Cypress	Taxable FNMA Mortgage-backed Securities Program	5,500,000
City of Pomona	Mortgage Asset Liquidation	58,395,000
City of Pomona	Mortgage Asset Liquidation	30,000,000
City of Pomona	Mortgage Asset Liquidation	24,505,000
City of San Bernadino	GNMA Mortgage Asset Liquidation Program	18,840,000
City of Cypress	Mortgage Revenue Refunding Bonds	7,595,000
City of Cypress	Subordinate Mortgage revenue Refunding Bonds	810,000
San Marcus Public Facilities Authority	Tax Allocation refunding Bonds-Project Area 1,2 and 3	47,425,000
Lancaster-Grand Terrace Huntington Park	Mortgage Revenue Refunding Bonds	9,385,000
Lancaster-Grand Terrace Huntington Park	Subordinate Mortgage Revenue Refunding Bond	1,900,000
City of Palmdale	Interest Only Certificates	1,300,000
City of Palmdale	Mortgage Revenue refunding Bonds	46,625,000
City of Palmdale	Residential Mortgage Revenue Refunding Bonds	9,260,000
City of Colton	Taxable FNMA Mortgage-Backed Securities Program	6,475,000
City of Montclair	Taxable FNMA Mortgage-Backed Securities Program	4,400,000
City and County of San Francisco	Mortgage Revenue Bonds Rights Acquisition	83,085,000
City of San Bernadino	Taxable Collateralized Mortgage Refunding Bonds	38,034,745
Housing Authority of Brevard County, FL	Mortgage Revenue Bonds, Rights Acquisition	90,010,000
Tulsa County Housing Authority, OK.	Collateralized Mortgage Refunding Bonds	57,798,085
City of Juneau, Alaska	Collateralized Mortgage Refunding Bonds	29,550,000
New Castle County, Delaware	Mortgage RevenueBonds-Rights Acquisition	125,000,000
New Castle County, Delaware	Mortgage RevenueBonds-Rights Acquisition	90,000,000
City of Waukegan, IL	Taxable Collateralized Mortgage Refunding Bonds	13,985,000
City of Ontario	Variable Rate Multifamily Revenue Demand Bonds	7,000,000
City of Oceanside	Multifamily Housing Revenue Refunding Bonds	43,240,000
Walnut Valley School District	Refunding General Obligation Bonds	52,000,000
City of Cypress	Special Refunding Tax Bonds-Sorrento Homes	14,425,000
San Marcus, Public Facilities Authority	Public Improvement Revenue Bonds	8,315,000
Jurupa Community Services District	Special Tax Bonds-Mira Loma Area	12,605,000
San Marcus Public Facilities Authority	Community Facilites District No. 88	61,700,000
Rialto Redevelopment Agency	Tax Allocation Bonds-Auga Mansa	5,575,000
Rialto Redevelopment Agency	Tax Allocation Bonds-Series A	13,100,000
Rialto Redevelopment Agency	Tax Allocation Bonds-Series B	2,920,000
City of Pomona	GNMA & FHLMC Mortgage-Backed Securities	24,505,000
Village of Addison, Cities of Alton, Granite City and Pokin, IL.	Mortgage Asset Liquidation	35,924,535
<b>TOTAL</b>		<b>1,431,102,365</b>



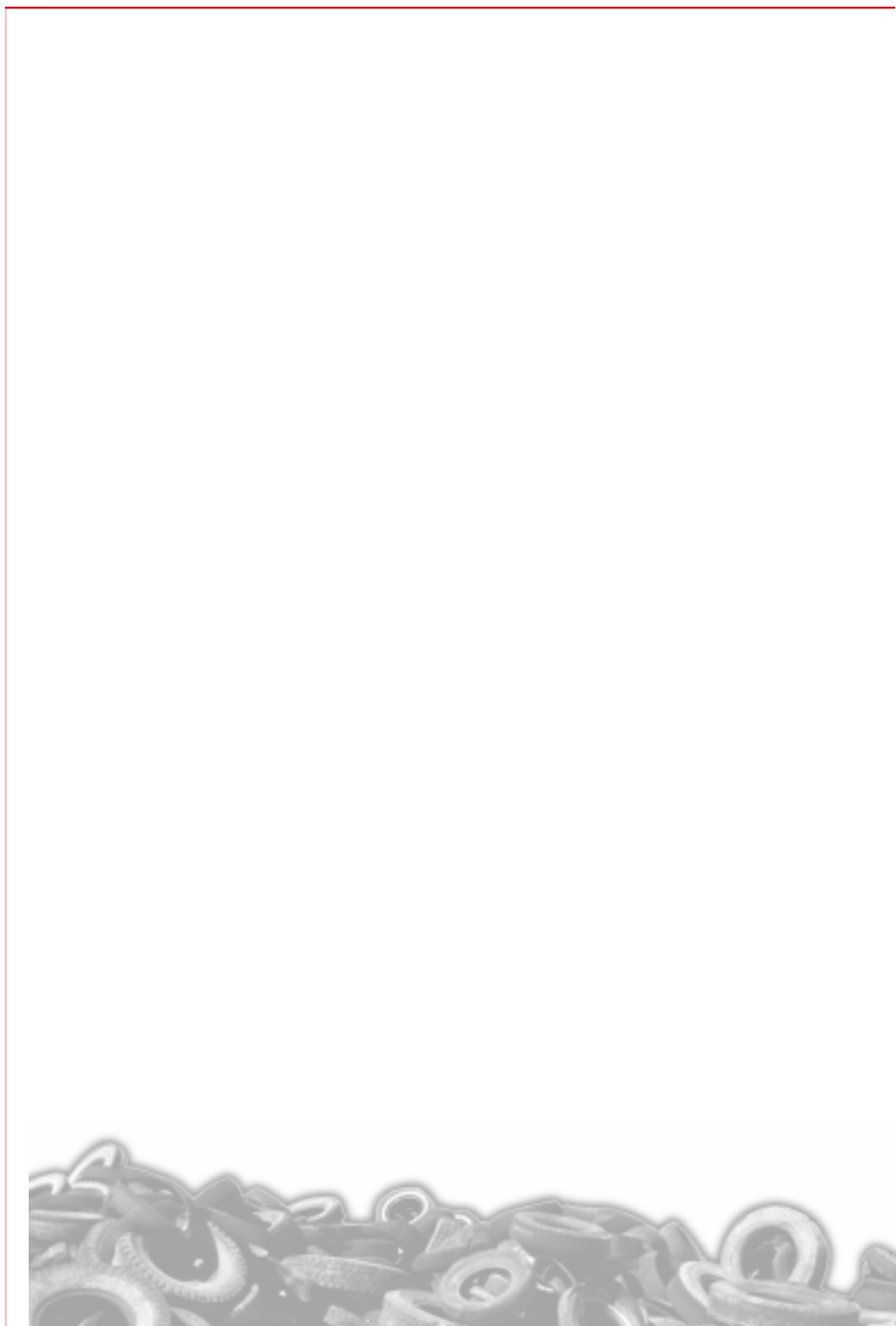


FIGURE 1  
BORDER ENVIRONMENTAL  
INFRASTRUCTURE PROJECTS  
CALIFORNIA - BAJA CALIFORNIA 1998

